

**DC SPECIFICATIONS**

CONDITIONS: 1 PLC or 5 PLC.

For <1PLC, add appropriate "ppm of range" adder from "RMS Noise" table.

Includes rear panel Analog Backplane connector and transducer conversion. Refer to DC Notes for additional card uncertainties.

Accuracy: +/- (ppm of reading + ppm of range)  
(ppm = parts per million) (e.g., 10ppm = 0.001%)

| Function                               | Range <sup>1</sup>         | Resolution     | Test Current or Burden Voltage | Input Resistance or Open Ckt. Voltage <sup>2</sup> | 24 Hour <sup>3</sup> 23°C ± 1° | 90 Day 23°C ± 5° | 1 Year 23°C ± 5° | Temperature Coefficient 0° -18°C & 28° - 50°C |
|--|----------------------------|----------------|--------------------------------|--|--------------------------------|------------------|------------------|---|
| Voltage <sup>4</sup>                   | 100.00000 mV <sup>19</sup> | 0.01µV         |                                | >10G Ω or 10M Ω ± 1%                               | 10 + 9                         | 25 + 9           | 30 + 9           | (1 + 5)/°C                                    |
|  | 1.0000000 V <sup>19</sup>  | 0.1µV          |                                | >10G Ω or 10M Ω ± 1%                               | 7 + 2                          | 25 + 2           | 30 + 2           | (1 + 1)/°C                                    |
|  | 10.000000 V                | 1µV            |                                | >10G Ω or 10M Ω ± 1%                               | 7 + 2                          | 20 + 2           | 25 + 2           | (1 + 1)/°C                                    |
|  | 100.00000 V                | 10µV           |                                | 10M Ω ± 1%   | 15 + 6                         | 35 + 6           | 40 + 6           | (5 + 1)/°C                                    |
|  | 300.00000 V                | 100µV          |                                | 10M Ω ± 1%   | 20 + 6                         | 35 + 6           | 40 + 6           | (5 + 1)/°C                                    |
| Resistance <sup>4, 5, 6, 7</sup>       | 1.0000000 Ω                | 0.1µΩ          | 10mA                           | 8.2V   | 15 + 80                        | 40 + 80          | 60 + 80          | (8 + 1)/°C                                    |
|  | 10.000000 Ω                | 1µΩ            | 10mA                           | 8.2V   | 15 + 9                         | 40 + 9           | 60 + 9           | (8 + 1)/°C                                    |
|  | 100.00000 Ω                | 10µΩ           | 1mA                            | 13.9V  | 15 + 9                         | 45 + 9           | 65 + 9           | (8 + 1)/°C                                    |
|  | 1.0000000 kΩ               | 100µΩ          | 1mA                            | 13.9V  | 20 + 4                         | 45 + 4           | 65 + 4           | (8 + 1)/°C                                    |
|  | 10.000000 kΩ               | 1m Ω           | 100µA                          | 9.1V   | 15 + 4                         | 40 + 4           | 60 + 4           | (8 + 1)/°C                                    |
|  | 100.00000 kΩ               | 10m Ω          | 10µA                           | 14.7V  | 20 + 4                         | 45 + 5           | 65 + 5           | (8 + 1)/°C                                    |
|  | 1.0000000 MΩ               | 100m Ω         | 10µA                           | 14.7V  | 25 + 4                         | 50 + 5           | 70 + 5           | (8 + 1)/°C                                    |
|  | 10.000000 MΩ               | 1 Ω            | 0.64µA // 10MΩ                 | 6.4V   | 150 + 6                        | 200 + 10         | 400 + 10         | (70 + 1)/°C                                   |
| 100.00000 MΩ                           | 10 Ω                       | 0.64µA // 10MΩ | 6.4V                           | 800 + 30   | 2000 + 30                      | 2000 + 30        | (385 + 1)/°C     |   |
| Dry Circuit Resistance <sup>6, 8</sup> | 1.0000000 Ω                | 1µΩ            | 10mA                           | 27mV   | 25 + 80                        | 50 + 80          | 70 + 80          | (8 + 1)/°C                                    |
|  | 10.000000 Ω                | 10µΩ           | 1mA                            | 20mV   | 25 + 80                        | 50 + 80          | 70 + 80          | (8 + 1)/°C                                    |
|  | 100.00000 Ω                | 100µΩ          | 100µA                          | 20mV   | 25 + 80                        | 90 + 80          | 140 + 80         | (8 + 1)/°C                                    |
|  | 1.0000000 kΩ               | 1mΩ            | 10µA                           | 20mV   | 25 + 80                        | 180 + 80         | 400 + 80         | (8 + 1)/°C                                    |
|  | 2.0000000 kΩ               | 10m Ω          | 5µA                            | 20mV   | 25 + 80                        | 320 + 80         | 800 + 80         | (8 + 1)/°C                                    |
| Continuity (2W) <sup>9</sup>           | 1.000 kΩ                   | 100mΩ          | 1mA                            | 13.9V  | 40 + 100                       | 100 + 100        | 100 + 100        | (8 + 1)/°C                                    |
| Current <sup>9</sup>                   | 10.000000 µA               | 1pA            | <61mV                          |  | 40 + 50                        | 300 + 50         | 500 + 50         | (35 + 9)/°C                                   |
|  | 100.00000 µA               | 10pA           | <105mV                         |  | 50 + 9                         | 300 + 30         | 500 + 30         | (50 + 5)/°C                                   |
|  | 1.0000000 mA               | 100pA          | <130mV                         |  | 50 + 9                         | 300 + 30         | 500 + 30         | (50 + 5)/°C                                   |
|  | 10.000000 mA               | 1nA            | <150mV                         |  | 50 + 9                         | 300 + 30         | 500 + 30         | (50 + 5)/°C                                   |
|  | 100.00000 mA               | 10nA           | <0.4V                          |  | 50 + 9                         | 300 + 30         | 500 + 30         | (50 + 5)/°C                                   |
|  | 1.0000000 A                | 100nA          | <0.6V                          |  | 200 + 60                       | 500 + 60         | 800 + 60         | (50 + 10)/°C                                  |
| 3.0000000 A                            | 1µA                        | <1.8V          |                                | 1000 + 75  | 1200 + 75                      | 1200 + 75        | (50 + 10)/°C     |   |

**Temperature**

(Displayed in °C, °F, or K. Exclusive of probes errors.)  
Thermocouples (Accuracy based on ITS-90.)

| Type | Range            | Resolution | 90 Day / 1 Year 23°C ± 5°    |                           | 90 Day / 1 Year 23°C ± 5° |                           | Temperature Coefficient 0° - 18°C & 28° - 50°C |
|------|------------------|------------|------------------------------|---------------------------|---------------------------|---------------------------|--|
|      |                  |            | Simulated Reference Junction | 3720, 3721, or 3724 Cards | Range                     | 3720, 3721, or 3724 Cards |  |
| J    | -150 to +760 °C  | 0.001°C    | 0.2°C                        | 1.0°C                     | -200 to -150 °C           | 1.5°C                     | 0.03°C/°C                                      |
| K    | -150 to +1372°C  | 0.001°C    | 0.2°C                        | 1.0°C                     | -200 to -150°C            | 1.5°C                     | 0.03°C/°C                                      |
| N    | -100 to +1300 °C | 0.001°C    | 0.2°C                        | 1.0°C                     | -200 to -100 °C           | 1.5°C                     | 0.03°C/°C                                      |
| T    | -100 to +400°C   | 0.001°C    | 0.2°C                        | 1.0°C                     | -200 to -100°C            | 1.5°C                     | 0.03°C/°C                                      |
| E    | -150 to +1000°C  | 0.001°C    | 0.2°C                        | 1.0°C                     | -200 to -150°C            | 1.5°C                     | 0.03°C/°C                                      |
| R    | +400 to +1768°C  | 0.1°C      | 0.6°C                        | 1.8°C                     | 0 to +400°C               | 2.3°C                     | 0.03°C/°C                                      |
| S    | +400 to +1768°C  | 0.1°C      | 0.6°C                        | 1.8°C                     | 0 to +400°C               | 2.3°C                     | 0.03°C/°C                                      |
| B    | +1100 to +1820°C | 0.1°C      | 0.6°C                        | 1.8°C                     | +350 to +1100°C           | 2.8°C                     | 0.03°C/°C                                      |

**4-Wire RTD or 3-Wire RTD:** (100Ω platinum [PT100], D100, F100, PT385, PT3916, or USER 0Ω to 10kΩ. Selectable Offset compensation On or Off).  
For 3-Wire RTD, dmm.connect=dmm.CONNECT\_FOUR\_WIRE, ≤ 0.1Ω lead resistance mis-matching in Input HI and LO. Add 0.25°C/ 0.1Ω of lead resistance mis-match.

|            |                |        |        |  |            |
|------------|----------------|--------|--------|--|------------|
| 4-Wire RTD | -200 to +630°C | 0.01°C | 0.06°C |  | 0.003°C/°C |
| 3-Wire RTD | -200 to +630°C | 0.01°C | 0.75°C |  | 0.003°C/°C |

**Thermistor:**(2.2kΩ, 5kΩ, and 10kΩ). Not recommend with Model 3724 card. See Model 3724 manual for "Measurement Considerations".

|  |               |        |        |  |            |
|--|---------------|--------|--------|--|------------|
|  | -80 to +150°C | 0.01°C | 0.08°C |  | 0.002°C/°C |
|--|---------------|--------|--------|--|------------|

DC Specifications.

**1PLC and 5PLC RMS Noise are included in DC Specifications.**

| DC Speeds vs. RMS Noise               |                      |                |        | RMS Noise <sup>16</sup><br>PPM of Range   |         |         |           |      | Measurements into Buffer <sup>13</sup> |                 | Measurement to PC <sup>13</sup> |              |              |
|---------------------------------------|----------------------|----------------|--------|---|---------|---------|-----------|------|--|-----------------|---------------------------------|--------------|--------------|
| Single Channel, 60Hz (50Hz) Operation |                      |                |        | RMS Noise calculator<br>Add 2.5 x "RMS Noise" to "ppm of range"<br>(e.g. 10V @ 0.006plc) "ppm of range" = 2.5 x 7.0ppm + 2ppm |         |         |           |      | (Rdg/s)                                |                 | (ms / Rdg)<br>AzeroOff          |              |              |
| Function                              | NPLC                 | Aperture (ms)  | Digits | 100mV   | 1V      | 10V     | 100V      | 300V | Azero On                               | Azero Off       | Enet                            | GPiB         | USB          |
| DCV                                   | 5 <sup>14</sup>      | 83.3 (100)     | 7-½    | 1.0   | 0.07    | 0.05    | 0.7       | 0.2  | 9.5 (8)                                | 12 (10)         | 86.3 (104)                      | 86.1 (102.8) | 86.3 (103.1) |
|                                       | 1 <sup>14</sup>      | 16.7 (20)      | 7-½    | 0.9   | 0.12    | 0.1     | 0.8       | 0.35 | 42 (33)                                | 59.8 (49.5)     | 19.4 (22.7)                     | 19.5 (22.8)  | 19.9 (23.2)  |
|                                       | 0.2 <sup>12,14</sup> | 3.33 (4.0)     | 6-½    | 2.5   | 0.32    | 0.3     | 2.5       | 1.0  | 50 (40)                                | 60 (50)         | 19.4 (22.7)                     | 19.5 (22.8)  | 19.9 (23.2)  |
|                                       | 0.2 <sup>14</sup>    | 3.33 (4.0)     | 6-½    | 3.5   | 1.7     | 0.7     | 3.5       | 1.5  | 120 (100)                              | 295 (235)       | 7.6 (8.3)                       | 6.2 (6.8)    | 6.4 (7.0)    |
|                                       | 0.06 <sup>15</sup>   | 1.0 (1.2)      | 5-½    | 12  | 3.0     | 1.5     | 8.0       | 3.5  | 205 (165)                              | 935 (750)       | 1.40 (1.80)                     | 1.50 (1.80)  | 1.60 (2.30)  |
|                                       | 0.006 <sup>15</sup>  | 0.100 (0.120)  | 4-½    | 55  | 15      | 7.0     | 70        | 35   | 218 (215)                              | 6,200 (5,500)   | 0.55 (0.57)                     | 0.65 (0.67)  | 0.75 (0.77)  |
|                                       | 0.0005 <sup>15</sup> | 0.0083 (0.001) | 3-½    | 325   | 95      | 95      | 900       | 410  | 270 (270)                              | 14,600 (14,250) | 0.50 (0.5)                      | 0.60 (0.60)  | 0.70 (0.70)  |
|                                       |                      |                |        |   | 10-100Ω | 1KΩ     | 10KΩ      |      |  |                 |                                 |              |              |
| 2WΩ<br>(≤10kΩ)                        | 5 <sup>14</sup>      | 83.3 (100)     | 7-½    | 2.0   | 0.5     | 0.4     | —         | —    | 9.5 (8)                                | 12 (10)         | 87.0 (105)                      | 86.1 (103)   | 86.5 (104)   |
|                                       | 1 <sup>14</sup>      | 16.7 (20)      | 7-½    | 3.5   | 0.8     | 0.6     | —         | —    | 42 (33)                                | 59.8 (49.5)     | 21.0 (24.3)                     | 19.5 (22.8)  | 19.9 (23.2)  |
|                                       | 0.2 <sup>12,14</sup> | 3.33 (4.0)     | 6-½    | 6.5   | 1.7     | 1.5     | —         | —    | 50 (40)                                | 60 (50)         | 21.0 (24.3)                     | 19.5 (22.8)  | 19.9 (23.2)  |
|                                       | 0.2 <sup>14</sup>    | 3.33 (4.0)     | 6-½    | 8.0   | 4.5     | 5.5     | —         | —    | 120 (100)                              | 295 (235)       | 7.6 (8.3)                       | 6.2 (6.8)    | 6.4 (7.0)    |
|                                       | 0.06 <sup>15</sup>   | 1.0 (1.2)      | 5-½    | 15  | 6       | 6.5     | —         | —    | 205 (165)                              | 935 (750)       | 1.40 (1.80)                     | 1.50 (1.80)  | 1.60 (2.30)  |
|                                       | 0.006 <sup>15</sup>  | 0.100 (0.120)  | 4-½    | 60  | 15      | 15      | —         | —    | 218 (215)                              | 6,200 (5,500)   | 0.55 (0.57)                     | 0.65 (0.67)  | 0.75 (0.77)  |
|                                       | 0.0005 <sup>15</sup> | 0.0083 (0.001) | 3-½    | 190   | 190     | 190     | —         | —    | 270 (270)                              | 14,100 (13,700) | 0.50 (0.5)                      | 0.60 (0.60)  | 0.70 (0.70)  |
|                                       |                      |                |        |   | 10μA    | 100μA   | 1mA-100mA | 1A   | 3A                                     |                 |                                 |              |              |
| DCI                                   | 5 <sup>14</sup>      | 83.3 (100)     | 7-½    | 3.5   | 1.6     | 1.6     | 2.9       | 2.0  | 9.5 (8)                                | 12 (10)         | 88 (103)                        | 86.1 (102.8) | 86.3 (103.1) |
|                                       | 1 <sup>14</sup>      | 16.7 (20)      | 6-½    | 3.5   | 1.1     | 1.1     | 2.2       | 1.8  | 42 (33)                                | 59.8 (49.5)     | 21.0 (22.7)                     | 19.5 (22.8)  | 19.8 (23.1)  |
|                                       | 0.2 <sup>12,14</sup> | 3.33 (4.0)     | 5-½    | 50  | 5.0     | 3.0     | 4.0       | 8.0  | 50 (40)                                | 60 (50)         | 19.4 (22.7)                     | 19.5 (22.8)  | 19.8 (23.1)  |
|                                       | 0.2 <sup>14</sup>    | 3.33 (4.0)     | 4-½    | 100   | 35      | 12      | 4.0       | 8.0  | 120 (100)                              | 295 (235)       | 7.6 (8.3)                       | 6.2 (6.8)    | 6.4 (7.0)    |
|                                       | 0.06 <sup>15</sup>   | 1.0 (1.2)      | 4-½    | 350   | 35      | 20      | 8.0       | 20   | 205 (165)                              | 935 (750)       | 1.40 (1.80)                     | 1.50 (1.80)  | 1.60 (2.30)  |
|                                       | 0.006 <sup>15</sup>  | 0.100 (0.120)  | 4-½    | 400   | 200     | 40      | 50        | 100  | 218 (215)                              | 6,200 (5,500)   | 0.55 (0.57)                     | 0.65 (0.67)  | 0.75 (0.77)  |
|                                       | 0.0005 <sup>15</sup> | 0.0083 (0.001) | 3-½    | 2500  | 450     | 250     | 325       | 750  | 270 (270)                              | 14,100 (13,700) | 0.50 (0.5)                      | 0.60 (0.60)  | 0.70 (0.70)  |
|                                       |                      |                |        |   | 1Ω      | 10-100Ω | 1KΩ       | 10KΩ |  |                 |                                 |              |              |
| 4WΩ                                   | 5 <sup>14</sup>      | 83.3 (100)     | 7-½    | 5.5   | 0.8     | 0.5     | 0.5       | —    | 5 (4)                                  | 5.9 (4.7)       | 173 (206)                       | 173 (206)    | 173 (206)    |
|                                       | 1 <sup>14</sup>      | 16.7 (20)      | 7-½    | 15  | 1.4     | 0.5     | 0.7       | —    | 23.5 (18.5)                            | 29 (23)         | 39 (46)                         | 39 (46)      | 39 (46)      |
|                                       | 0.2 <sup>12,14</sup> | 3.33 (4.0)     | 5-½    | 100   | 30      | 10      | 50        | —    | 26.5 (21)                              | 30 (24)         | 39 (46)                         | 39 (46)      | 39 (46)      |
|                                       | 0.2 <sup>14</sup>    | 3.33 (4.0)     | 5-½    | 300   | 50      | 10      | 63        | —    | 80 (60)                                | 120 (95)        | 12.3 (14.5)                     | 11.3 (13.3)  | 11.7 (13.7)  |
|                                       | 0.06 <sup>15</sup>   | 1.0 (1.2)      | 4-½    | 500   | 50      | 15      | 70        | —    | 140 (110)                              | 285 (225)       | 6.2 (7.2)                       | 6.3 (7.3)    | 6.5 (7.6)    |
|                                       | 0.006 <sup>15</sup>  | 0.100 (0.120)  | 4-½    | 750   | 75      | 30      | 100       | —    | 200 (195)                              | 580 (565)       | 4.2 (4.4)                       | 4.3 (4.5)    | 4.6 (4.8)    |
|                                       | 0.0005 <sup>15</sup> | 0.0083 (0.001) | 3-½    | 3500  | 450     | 250     | 250       | —    | 210 (205)                              | 650 (645)       | 4.2 (4.4)                       | 4.3 (4.5)    | 4.6 (4.8)    |
|                                       |                      |                |        |   | 1Ω      | 10-100Ω | 1KΩ       | 10KΩ |  |                 |                                 |              |              |
| 4WΩ<br>OCOMP                          | 5 <sup>14</sup>      | 83.3 (100)     | 7-½    | 5.5   | 0.8     | 0.5     | 0.5       | —    | 2.5 (2.0)                              | 2.9 (2.3)       | 343 (427)                       | 341 (425)    | 342 (426)    |
|                                       | 1 <sup>14</sup>      | 16.7 (20)      | 7-½    | 16  | 1.5     | 0.7     | 1.5       | —    | 12.7(10)                               | 14 (11.2)       | 77 (95)                         | 74 (92)      | 75 (93)      |
|                                       | 0.2 <sup>12,14</sup> | 3.33 (4.0)     | 6-½    | 45  | 4.5     | 2.1     | 3.5       | —    | 14 (11.2)                              | 15 (12)         | 70 (86.5)                       | 70 (86.5)    | 70 (86.5)    |
|                                       | 0.2 <sup>14</sup>    | 3.33 (4.0)     | 5-½    | 500   | 50      | 13      | 30        | —    | 46.5 (37)                              | 56 (44)         | 22.7 (25)                       | 20.5 (23)    | 21.1 (24)    |
|                                       | 0.0005 <sup>15</sup> | 0.0083 (0.001) | 3-½    | 4500  | 650     | 400     | 400       | —    | 129 (125)                              | 215 (210)       | 6.7 (6.7)                       | 6.8 (6.8)    | 7 (7)        |
|                                       |                      |                |        |   | 1-10Ω   | 100Ω    | 1KΩ       | 2KΩ  |  |                 |                                 |              |              |
| Dry-CktΩ<br>OCOMP                     | 5 <sup>14</sup>      | 83.3 (100)     | 6-½    | 8.0   | 10      | 10      | 8.0       | —    | 2.5 (2.0)                              | 2.9 (2.3)       | 347 (430)                       | 345 (428)    | 346 (429)    |
|                                       | 1 <sup>14</sup>      | 16.7 (20)      | 5-½    | 17  | 22      | 25      | 28        | —    | 12 (9.5)                               | 13 (10)         | 80 (99)                         | 77 (95)      | 78 (97)      |
|                                       | 0.2 <sup>12,14</sup> | 3.33 (4.0)     | 4-½    | 50  | 50      | 50      | 50        | —    | 14 (11.2)                              | 15 (12)         | 70 (86.5)                       | 70 (86.5)    | 70 (86.5)    |
|                                       | 0.2 <sup>14</sup>    | 3.33 (4.0)     | 3-½    | 500   | 1000    | 1000    | 1500      | —    | 35 (30)                                | 45 (36)         | 27 (33)                         | 25 (31)      | 26 (32)      |
|                                       | 0.0005 <sup>15</sup> | 0.0083 (0.001) | 2-½    | 8500  | 8500    | 8500    | 8500      | —    | 84 (84)                                | 115 (110)       | 10.7 (10.7)                     | 10.7 (10.7)  | 11 (11)      |

| 1 PLC and 5 PLC Noise are included in RTD Specifications. |                      |                |        |                                 |        |  |           |                                 |             |             |
|---|----------------------|----------------|--------|---------------------------------|--------|--|-----------|---------------------------------|-------------|-------------|
| RTD Speeds vs. Noise                                      |                      |                |        | Add °C to Reading <sup>16</sup> |        | Measurements into Buffer <sup>13</sup> |           | Measurement to PC <sup>13</sup> |             |             |
| Single Channel, 60Hz (50Hz) Operation                     |                      |                |        |                                 |        | (Rdg/s)                                |           | (ms / Rdg) AzeroOff             |             |             |
| Function  | NPLC                 | Aperture (ms)  | Digits | 4-Wire                          | 3-Wire | Azero On                               | Azero Off | Enet                            | GPIB        | USB         |
| OCOMP OFF   | 5 <sup>14</sup>      | 83.3 (100)     | 7-½    | 0                               | 0      | 5 (4)                                  | 5.9 (4.7) | 173 (206)                       | 173 (206)   | 173 (206)   |
|   | 1 <sup>14</sup>      | 16.7 (20)      | 7-½    | 0                               | 0      | 23.5 (18.5)                            | 29 (23)   | 39 (46)                         | 39 (46)     | 39 (46)     |
|   | 0.2 <sup>12,14</sup> | 3.33 (4.0)     | 5-½    | 0.01                            | 0.01   | 26.5 (21)                              | 30 (24)   | 39 (46)                         | 39 (46)     | 39 (46)     |
|   | 0.2 <sup>14</sup>    | 3.33 (4.0)     | 5-½    | 0.18                            | 0.18   | 80 (60)                                | 120 (95)  | 12.3 (14.5)                     | 11.3 (13.3) | 11.7 (13.7) |
|   | 0.06 <sup>15</sup>   | 1.0 (1.2)      | 4-½    | 0.24                            | 0.24   | 140 (110)                              | 285 (225) | 6.2 (7.2)                       | 6.3 (7.3)   | 6.5 (7.6)   |
| OCOMP ON  | 5 <sup>14</sup>      | 83.3 (100)     | 7-½    | 0                               | 0      | 2.5 (2.0)                              | 2.9 (2.3) | 343 (427)                       | 341 (425)   | 342 (426)   |
|   | 1 <sup>14</sup>      | 16.7 (20)      | 7-½    | 0                               | 0      | 12.7(10)                               | 14 (11.2) | 77 (95)                         | 74 (92)     | 75 (93)     |
|   | 0.2 <sup>12,14</sup> | 3.33 (4.0)     | 6-½    | 0.02                            | 0.02   | 14 (11.2)                              | 15 (12)   | 70 (86.5)                       | 70 (86.5)   | 70 (86.5)   |
|   | 0.2 <sup>14</sup>    | 3.33 (4.0)     | 5-½    | 0.38                            | 0.38   | 46.0 (37)                              | 56 (44)   | 22.7 (25)                       | 20.5 (23)   | 21.1 (24)   |
|   | 0.0005 <sup>15</sup> | 0.0083 (0.001) | 3-½    | 4.67                            | 4.67   | 128 (125)                              | 215 (210) | 6.7 (6.7)                       | 6.8 (6.8)   | 7 (7)       |

| System Performance <sup>13, 14</sup>   |                        |                     |                   |
|--|------------------------|---------------------|-------------------|
| 3-1/2 Digit Mode, azero off, and nPLC=0.0005. Time includes function change from either DCV or 2WΩ to listed function. |                        |                     |                   |
| Function   | Function Change (msec) | Range Change (msec) | Auto-range (msec) |
| DCV or 2WΩ (<10KΩ)   | 10                     | 10                  | 10                |
| 4WΩ (<10k)   | 20                     | 20                  | 20                |
| DCI  | 10                     | 10                  | 10                |
| Frequency or Period <sup>17</sup>  | 110                    | 10                  | —                 |
| ACV or ACI <sup>17</sup>   | 20                     | 85                  | 300               |

| Buffer Transfer Speed                    | Enet   | GPIB   | USB    |
|--|--------|--------|--------|
| Average for 1000 readings                | 2450/s | 2000/s | 1800/s |
| Average for 1000 readings with timestamp | 2300/s | 1800/s | 1600/s |

| Card                                 | Command   | Single Command Execution time (ms) |      |      |
|--------------------------------------|---|------------------------------------|------|------|
|                                      |   | Enet                               | GPIB | USB  |
| 3720, 3721, 3722, 3730               | channel.close (ch_list) or channel.open (ch_list)             | 5.7                                | 5.8  | 6.1  |
| 3723, 3724, 3731, 3732 <sup>18</sup> | channel.close (ch_list) or channel.open (ch_list)             | 2.3                                | 2.4  | 2.7  |
| 3740                                 | channel.close (ch_list 1-28) or channel.open (ch_list 1-28)   | 10.7                               | 10.8 | 11.1 |
|                                      | channel.close (ch_list 29-32) or channel.open (ch_list 29-32) | 22.7                               | 22.8 | 23.1 |

| AC Speeds                             |                      |                     |               | Measurements into Buffer <sup>13</sup> |                             |               | Measurement to PC <sup>13</sup>     |                                     |                                     |
|---------------------------------------|----------------------|---------------------|---------------|--|-----------------------------|---------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Single Channel, 60Hz (50Hz) Operation |                      |                     |               | (Rdg/s)                                |                             |               | (ms / Rdg)                          |                                     |                                     |
| Function                              | Detector Bandwidth   | NPLC                | Aperture (ms) | Digits                                 | Azero On                    | Azero Off     | Enet                                | GPIB                                | USB                                 |
| ACI / ACV                             | 3                    | n/a                 | n/a           | 6-½                                    | 0.45 (0.45)                 | n/a           | 2150 (2150)                         | 2150 (2150)                         | 2150 (2150)                         |
|                                       | 30                   | n/a                 | n/a           | 6-½                                    | 2.5 (2.5)                   | n/a           | 400 (400)                           | 400 (400)                           | 400 (400)                           |
|                                       | 300                  | 1.0 <sup>14</sup>   | 16.67 (20)    | 6-½                                    | 42 (33)                     | 59.5 (50)     | 19.4 (22.7)                         | 19.5 (22.8)                         | 19.8 (23.1)                         |
|                                       | 300                  | 0.2 <sup>14</sup>   | 3.33 (4.0)    | 6-½                                    | 120 (100)                   | 295 (235)     | 7.6 (8.3)                           | 6.2 (6.8)                           | 6.4 (7.0)                           |
|                                       | 300                  | 0.06 <sup>15</sup>  | 1.0 (1.2)     | 5-½                                    | 170 (165)                   | 935 (750)     | 1.40 (1.80)                         | 1.50 (1.80)                         | 1.60 (2.30)                         |
|                                       | 300                  | 0.006 <sup>15</sup> | 0.100 (0.120) | 4-½                                    | 218 (215)                   | 6,200 (5,500) | 0.55 (0.57)                         | 0.65 (0.67)                         | 0.75 (0.77)                         |
| 300                                   | 0.0005 <sup>15</sup> | 0.0083 (0.001)      | 3-½           | 218 (215)                              | 14,600 (14,250)             | 0.50 (0.5)    | 0.60 (0.60)                         | 0.70 (0.70)                         |                                     |
| Frequency / Period                    | n/a                  |                     | 10 → 273      | n/a                                    | 2x input period + Gate time | n/a           | 2x input period + Gate time + 2.7ms | 2x input period + Gate time + 2.8ms | 2x input period + Gate time + 3.1ms |

DC Notes

**DC Measurement Characteristics**

**DC Volts:**

**A-D LINEARITY:** 1.0 ppm of reading + 2.0 ppm of range.

**INPUT IMPEDANCE:**

**100mV – 10V Ranges:** Selectable >10GΩ// <400pF or 10MΩ ±1%.

**100V – 300V ranges:** 10MΩ ±1%.

**Input Bias Current:** <50pA at 23°C with dmm.autozero=dmm.OFF or dmm.inputdivider=dmm.ON.

**Common Mode Current:** <500nA peak-to-peak for ≤1MHz.

**Autozero OFF Error:** For DCV ±1°C and ≤10minutes,

Add ±(8ppm of reading + 5μV).

**Input Protection:** 300V all ranges.

**Common Mode Voltage:** 300V DC or 300Vrms (425V peak for AC waveforms) between any terminal and chassis.

**Resistance:**

**MAX 4WΩ LEAD RESISTANCE:** 5Ω per lead for 1Ω range, 10% of range per lead for 10Ω → 1kΩ ranges; 1kΩ per lead for all other ranges.

**For Dry Ckt.**

**MAX 4WΩ LEAD RESISTANCE:** 0.5Ω per lead for 1Ω range; 10% of range per lead for 10Ω → 100Ω ranges; 50Ω per lead for 1kΩ → 2kΩ range.

**INPUT IMPEDANCE:**

**1Ω – 10Ω Ranges:** 99kΩ ±1% // <1μF.

**100Ω – 2kΩ Ranges:** 10MΩ ±1% // <0.015μF.

**OFFSET COMPENSATION:** Selectable on 4WΩ 1Ω → 10kΩ ranges.

**OPEN LEAD DETECTOR:** Selectable per channel. 1.5uA, ±20% sink current per DMM SHI and SLO lead. Default on.

**CONTINUITY THRESHOLD:** Adjustable 1 to 1000Ω.

**Autozero OFF Error:** For 2WΩ ±1°C and ≤10minutes,

Add ±(8ppm of reading + 0.5mΩ for 10Ω and 5mΩ for all other ranges).

**INPUT PROTECTION:** 300V all ranges.

**DC Current:**

**Autozero OFF Error:** For ±1°C and ≤10minutes,

Add ±(8ppm of reading + range error). Refer to table below.

| Range   | 3A     | 1A     | 100mA | 10mA   | 1mA    | 100μA  | 10μA   |
|---|--------|--------|-------|--------|--------|--------|--------|
| Shunt Resistance guaranteed by design   | 0.05Ω  | 0.05Ω  | 1Ω    | 10Ω    | 100Ω   | 1kΩ    | 6kΩ    |
| Burden Voltage  | <1.75V | <0.55V | <0.4V | <150mV | <130mV | <105mV | <61mV  |
| Burden Voltage with 3721 card   | <2.35V | <1.15V | <0.4V | <150mV | <130mV | <105mV | <61mV  |
| Autozero OFF "of range" error   | 100μA  | 100μA  | 5μA   | 0.5μA  | 50nA   | 5nA    | 0.85nA |
| For each additional amp after ±1.5A input, add the following to ppm of range. | —      | 120    | 60    | 60     | 60     | 60     | 95     |

**INPUT PROTECTION:** 3A, 250V fuse.

**Thermocouples:**

**CONVERSION:** ITS-90.

**REFERENCE JUNCTION:** Internal, External, or Simulated (Fixed).

**OPEN LEAD DETECTOR:** Selectable per channel. Open >1.15k ±50Ω. Default on.

**COMMON MODE ISOLATION:** 300V DC or 300Vrms (425V peak for AC waveforms), >10GΩ and <350pF any terminal to chassis.

End DC

**DC Notes**

- 20 % overrange on DC functions except 1% on 300V and 3.33% on 3A.
- ±5% (Measured with 10MΩ input Resistance DMM, >10GΩ DMM on 10MΩ and 100MΩ ranges). Refer to table for other 2W/4W configurations. For Dry Circuit, +20%, <1mV with dmm.offsetcompensation=ON for 100Ω → 2kΩ ranges.

| Range      | 2W    | Ocomp Off |             | Ocomp On |             |
|------------|-------|-----------|-------------|----------|-------------|
|            |       | 4W        | 4W - Kelvin | 4W       | 4W - Kelvin |
| 1, 10Ω     | 8.2V  | 8.2V      | 8.2V        | 12.1V    | 12.1V       |
| 100, 1kΩ   | 13.9V | 14.1V     | 13.9V       | 15.0V    | 12.7V       |
| 10kΩ       | 9.1V  | 9.1V      | 9.1V        | 0.0V     | 0.0V        |
| 100k, 1MΩ  | 12.7V | 14.7V     | 12.7V       | —        | —           |
| 10M, 100MΩ | 6.4V  | 6.4V      | 6.4V        | —        | —           |

- Relative to calibration accuracy.
- Add the following additional uncertainty with -ST Accessory:

| Cards                      | "ppm of range" |     |     | "ppm of reading + ppm of range" |          |         |          |
|----------------------------|----------------|-----|-----|---------------------------------|----------|---------|----------|
|                            | 100mV          | 1V  | 10V | 100kΩ                           | 1MΩ      | 10MΩ    | 100MΩ    |
| 3720, 3721, 3722, and 3730 | 45             | 4.5 | -   | 8 + 5                           | 8 + 0.5  | -       | -        |
| 3723                       | 60             | 6.0 | -   | 8 + 6                           | 8 + 0.5  | -       | -        |
| 3724                       | 45             | 4.5 | -   | 8 + 5                           | 80 + 0.5 | 250 + 1 | 5000 + 1 |
| 3731                       | 800            | 80  | 8   | 8 + 80                          | 40 + 8   | 0 + 25  | 0 + 15   |
| 3732 (Quad 4x28)           | 200            | 20  | 2   | 8 + 20                          | 40 + 2   | 0 + 7   | 0 + 4    |

- Specifications are for 4-wire Ω, 1Ω → 1kΩ with offset compensation on. For the Model 3700 plug-in cards, LSYNC and offset compensation on. 1Ω range is 4-wire only. The Model 3724 card, 1kΩ → 100MΩ and 3731 card, 100Ω → 100MΩ ranges only.

For 2-wire Ω specifications, add the following to "ppm of range" uncertainty:

| DMM Connect Relays | Rel Enable | Rear Panel Connector or 3700 Card | 3724 Card | 3731 Card |
|--------------------|------------|-----------------------------------|-----------|-----------|
| CONNECT_ALL        | ON         | 100mΩ                             | 500mΩ     | 900mΩ     |
| CONNECT_ALL        | OFF        | 1.5Ω                              | 64Ω       | 2.3Ω      |
| CONNECT_TWO_WIRE   | ON         | 700mΩ                             | 1.2Ω      | 1.5Ω      |
| CONNECT_TWO_WIRE   | OFF        | 1.5Ω                              | 64Ω       | 2.3Ω      |

- Test current with dmm.offsetcompensation=OFF, (± 5%).
- Add the following to "ppm of reading" uncertainty when using 3700 plug in cards in Operating Environment ≥50%RH.

| Card  | 10kΩ  | 100kΩ   | 1MΩ   | 10MΩ | 100MΩ |
|---|-------|---------|-------|------|-------|
| 3720, 3721, 3724, 3730, 3731, 3732 (Quad 4x28) with MTC D-Shell connector     | 1ppm  | 10 ppm  | 0.01% | 0.1% | 1%    |
| 3720, 3721, 3724, 3730, 3731, 3732 (Quad 4x28) with -ST screw terminal module | 10ppm | 100 ppm | 0.1%  | 1%   | 10%   |
| 3722 and 3723   | 10ppm | 100 ppm | 0.1%  | 1%   | 10%   |

3700 plug in cards Operating Environment: Specified for 0°C to 50°C, ≤70%RH at 35°C.

- Dry-Ckt Ω is 4-wire only. Specifications with offset compensation and LSYNC on.

| Card                 | Ranges     |
|----------------------|------------|
| 3720, 3721, and 3730 | 1Ω → 2kΩ   |
| 3722, 3723, and 3732 | 10Ω → 2kΩ  |
| 3724                 | 1kΩ → 2kΩ  |
| 3731                 | 100Ω → 2kΩ |

- Includes Analog Backplane 15-pin rear panel connector. For 3721, refer to DC Current table for additional uncertainties.

- For LSYNC On, line frequency +/-0.1 %.

|                       | nPLC | 5          | 1          | ≤0.2 | ≤0.01 |
|-----------------------|------|------------|------------|------|-------|
| L <sub>SYNC</sub> On  | NMRR | 110 dB     | 90dB       | 45dB | —     |
| L <sub>SYNC</sub> Off | NMRR | 60dB, ±2dB | 60dB, ±2dB | —    | —     |

- For 1kohm unbalance in LO lead. AC CMRR is 70dB.

| nPLC | 5      | 1     | 0.2 <sup>12</sup> | ≤0.2 |
|------|--------|-------|-------------------|------|
| CMRR | 140 dB | 140dB | 120dB             | 80dB |

- For LSYNC On.

- Reading rates are for 60Hz (50Hz) operation using factory defaults operating conditions dmm.reset("all"), Autorange off, dmm.autodelay=dmm.OFF, dmm.opendetector=dmm.OFF, format.data.=format.SREAL. Rates listed below.

| Function                   | Range               |
|----------------------------|---------------------|
| DCV                        | 10V                 |
| 2WΩ or 4WΩ                 | 1KΩ                 |
| DCI                        | 1mA                 |
| Dry-Ckt Ω                  | 10Ω                 |
| Dry-Ckt Ω, Offset Comp OFF | 2KΩ, 60 rdg/s max   |
| Dry-Ckt Ω, Offset Comp ON  | 2KΩ, 29.5 rdg/s max |
| ACI                        | 1mA                 |
| ACV                        | 1V                  |
| T/C                        | Use DCV rates       |
| Thermistor                 | Use 2WΩ rates       |

Speeds are typical and include measurement and data transfer out the Enet, GPIB or USB.

- DMM configured for single reading, dmm.measurecount=1 and print(dmm.measure()). May require additional settling delays for full accuracy depending on measurement configuration.
- DMM configured for multi-sample readings and single buffer transfer, dmm.measurecount=1000, buf=dmm.makebuffer(1000), dmm.measure(buf), and printbuffer(1, 1000, buf).
- dmm.autozero=dmm.ON. RMS Noise using low thermal short for DCV, 2WΩ, 4WΩ, and Dry-Ckt Ω. For DCI, dmm.connect=dmm.CONNECT\_NONE or 0. For RTD, Noise using low thermal 190Ω precision resistor. Includes Model 3721 card accuracies. RMS Noise values are typical.
- For DCV or 2W to Frequency or Period, dmm.nplc=0.2 and dmm.aperture=0.01 sec. For ACI or ACV, dmm.detectorbandwidth=300. For ACI or ACV with dmm.autodelay=dmm.ON, best speed is 65ms.
- Speeds are within same Mux bank. Add an additional 8msec when changing banks or slots.
- When properly zeroed using REL function.

**AC**

| Function                            | Range <sup>1</sup>                  | Resolution | Calibration Cycle | Accuracy: ± (% of reading + % of range)         |                             |               |               |                |                 |
|-------------------------------------|-------------------------------------|------------|-------------------|---|-----------------------------|---------------|---------------|----------------|-----------------|
|                                     |                                     |            |                   | 3 Hz – 5Hz                                      | 5Hz – 10Hz                  | 10Hz – 20kHz  | 20kHz – 50kHz | 50kHz – 100kHz | 100kHz – 300kHz |
| Voltage <sup>2</sup>                | 100.0000mV                          | 0.1µV      | 90 Day            | 1.0 + 0.03                                      | 0.30 + 0.03                 | 0.05 + 0.03   | 0.11 + 0.05   | 0.6 + 0.08     | 4.0 + 0.5       |
|                                     | 1.000000V                           | 1µV        | (100mV – 100V)    |   |                             |               |               |                |                 |
|                                     | 10.00000V                           | 10µV       | 1 Year            | 1.0 + 0.03                                      | 0.30 + 0.03                 | 0.06 + 0.03   | 0.12 + 0.05   | 0.6 + 0.08     | 4.0 + 0.5       |
|                                     | 100.0000V                           | 100µV      | (100mV – 100V)    |   |                             |               |               |                |                 |
|                                     | 300.0000V                           | 1mV        | 90 Day            | 1.0 + 0.05                                      | 0.30 + 0.05                 | 0.05 + 0.05   | 0.11 + 0.08   | 0.6 + 0.11     | 4.0 + 0.8       |
|                                     | 300.0000V                           | 1mV        | 1 Year            | 1.0 + 0.05                                      | 0.30 + 0.05                 | 0.06 + 0.05   | 0.12 + 0.08   | 0.6 + 0.11     | 4.0 + 0.8       |
| <b>Temp. Coeff. /°C<sup>3</sup></b> |                                     |            |                   | 0.010 + 0.003                                   | 0.030 + 0.003               | 0.005 + 0.003 | 0.006 + 0.005 | 0.01 + 0.006   | 0.03 + 0.01     |
|                                     |                                     |            |                   | <b>23°C ± 5°</b>                                |                             |               |               |                |                 |
| Current <sup>2</sup>                | 1.000000mA <sup>7</sup>             | 1nA        |                   | 3 Hz – 5Hz                                      | 5 Hz – 10Hz                 | 10Hz – 2kHz   | 2kHz – 5kHz   | 5kHz – 10kHz   |                 |
|                                     | 10.00000mA                          | 10nA       |                   | 1.0 + 0.04                                      | 0.30 + 0.04                 | 0.08 + 0.03   | 0.09 + 0.03   | 0.09 + 0.03    |                 |
|                                     | 100.0000mA                          | 100nA      | 90 Day / 1 Year   | 1.0 + 0.04                                      | 0.30 + 0.04                 | 0.08 + 0.03   | 0.09 + 0.03   | 0.09 + 0.03    |                 |
|                                     | 1.000000A                           | 1µA        |                   | 1.0 + 0.04                                      | 0.30 + 0.04                 | 0.20 + 0.04   | 0.88 + 0.04   | 2.0 + 0.04     |                 |
|                                     | 3.000000A                           | 10µA       |                   | 1.0 + 0.05                                      | 0.30 + 0.05                 | 0.20 + 0.05   | 0.88 + 0.05   | 2.0 + 0.05     |                 |
|                                     | <b>Temp. Coeff. /°C<sup>3</sup></b> |            |                   |   | 0.10 + 0.004                | 0.030 + 0.004 | 0.005 + 0.003 | 0.006 + 0.005  | 0.006 + 0.005   |
|                                     |                                     |            |                   | <b>Accuracy: ±(ppm of reading + offset ppm)</b> |                             |               |               |                |                 |
| Frequency <sup>4</sup> and Period   | 100.0000mV                          | 0.333 ppm  |                   | ±(ppm of reading (3Hz – 500kHz)                 | + offset ppm (3Hz – 500kHz) | (333ms – 2µs) |               |                |                 |
|                                     | to                                  | 3.33 ppm   | 90 Day / 1 Year   | 80 + 0.333                                      | 80 + 0.333                  | (0.25s gate)  |               |                |                 |
|                                     | 300.0000V                           | 33.3 ppm   | (all ranges)      | 80 + 3.33                                       | 80 + 3.33                   | (100ms gate)  |               |                |                 |
|                                     |                                     |            |                   | 80 + 33.3                                       | 80 + 33.3                   | (10ms gate)   |               |                |                 |

| Low Frequency Uncertainty | Detector bandwidth |                    |                      |
|---------------------------|--------------------|--------------------|----------------------|
|                           | 3 (3Hz – 300KHz)   | 30 (30Hz – 300KHz) | 300 (300Hz – 300KHz) |
| 20Hz – 30Hz               | 0                  | 0.3                | —                    |
| 30Hz – 50Hz               | 0                  | 0                  | —                    |
| 50Hz – 100Hz              | 0                  | 0                  | 4.0                  |
| 100Hz – 200Hz             | 0                  | 0                  | 0.72                 |
| 200Hz – 300Hz             | 0                  | 0                  | 0.18                 |
| 300Hz – 500Hz             | 0                  | 0                  | 0.07                 |
| >500Hz                    | 0                  | 0                  | 0                    |

| Additional Uncertainty ±(% of reading) | Detector bandwidth | Crest Factor <sup>5</sup> |       |       |       |
|--|--------------------|---------------------------|-------|-------|-------|
|  |                    | 1 - 2                     | 2 - 3 | 3 - 4 | 4 - 5 |
| 5Hz – 10Hz                             | 3                  | 0.50                      | 1.20  | 1.30  | 1.40  |
| 10Hz – 30Hz                            | 3                  | 0.20                      | 0.30  | 0.60  | 0.90  |
| 30Hz – 100Hz                           | 3 or 30            | 0.20                      | 0.30  | 0.60  | 0.90  |
| >100Hz                                 | 3 or 30            | 0.05                      | 0.15  | 0.30  | 0.40  |
| 300Hz – 500Hz                          | 300 only           | 0.50                      | 1.20  | 1.30  | 1.40  |
| ≥500Hz                                 | 300 only           | 0.05                      | 0.15  | 0.30  | 0.40  |

**AC MEASUREMENT CHARACTERISTICS**

**AC Volts**

MEASUREMENT METHOD: AC-coupled, True RMS.

INPUT IMPEDANCE: 1MΩ±2% // by <150pF.

INPUT PROTECTION: 300VDC or 300Vrms rear inputs or 37xx cards.

**AC Current**

MEASUREMENT METHOD: AC-coupled, True RMS.

| Range                                 | 3A        | 1A        | 100mA    | 10mA      | 1mA       |
|---------------------------------------|-----------|-----------|----------|-----------|-----------|
| Shunt Resistance guaranteed by design | 0.05Ω     | 0.05Ω     | 1.0Ω     | 10Ω       | 100Ω      |
| Burden Voltage Rear panel             | <1.75Vrms | <0.55Vrms | <0.4Vrms | <150mVrms | <125mVrms |
| Burden Voltage 3721card               | <2.4Vrms  | <1.0Vrms  | <0.6Vrms | <200mVrms | <130mVrms |

INPUT PROTECTION: 3A, 250V fuse.

**FREQUENCY and PERIOD**

MEASUREMENT METHOD: Reciprocal Counting technique.

GATE TIME: dmm.aperture=0.273 → 0.01. Default 0.01s.

**AC General**

AC CMRR<sup>6</sup>: 70dB

VOLT \* HERTZ PRODUCT: ≤8 × 10<sup>7</sup> Volt\*Hz (guaranteed by design), ≤2.1 × 10<sup>7</sup> Volt\*Hz verified. Input frequency verified for ≤3x10<sup>5</sup> Hz.

**AC Notes**

- 20% overrange on AC functions except 1% on 300V and 3.33% on 3A. Default resolution is 5-½ digits; maximum useable resolution is 6-½ with 7-½ digits programmable.
- Specification are for Detector Bandwidth 3 and sinewave inputs >5% of range. Detector Bandwidth 3 and 30 are multi-sample A/D conversions. Detector bandwidth 300 is a single A/D conversion, programmable from 0.0005plc to 15plc. Default condition set to 1plc.
- Applies to 0°C - 18°C and 28°C - 50°C.
- Specified for square wave inputs. Input signal must be >10% of ACV range. If input is <20mV on the 100mV range then the frequency must be >10Hz. For sinewave inputs, frequency must be >100Hz.
- Applies for non-sinewave inputs, 5Hz → 10KHz, and DC content ≤3% of range.
- For 1kohm unbalance in LO lead.
- For Model 3721, 1mA ACI, add 0.05% to "of reading" uncertainty from 250Hz → 10kHz.

**GENERAL SPECIFICATIONS**

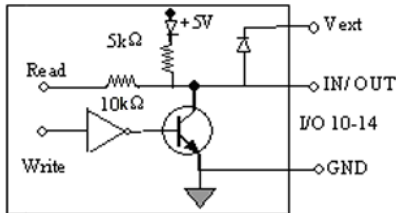
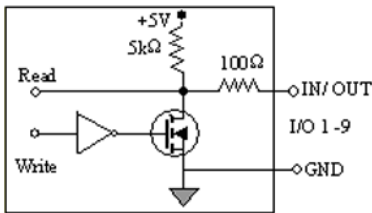
**EXPANSION SLOTS:** 6  
**POWER LINE:** Universal, 100V to 240V.  
**LINE FREQUENCY:** 50Hz and 60Hz, automatically sensed at power-up.  
**POWER CONSUMPTION:** 28VA with DMM and display, up to 140VA with ( 6 ) 3700 cards.  
**OPERATING ENVIRONMENT:** Specified for 0°C to 50°C, ≤80%RH at 35°C, altitude up to 2000 meters  
**STORAGE ENVIRONMENT:** -40°C to 70°C.  
**REAL TIME CLOCK:** Battery backed, 10-years typical life.  
**WARRANTY:** 1-yr.  
**EMC:** Conforms to European Union EMC Directive.  
**SAFETY:** Conforms to European Union Low Voltage Directive.  
**VIBRATION:** MIL-PRF-28800F Class 3, Random.  
**WARM-UP:** 2-hours to rated accuracy.

**DIMENSIONS:**

|  | High                 | Wide              | Deep              |
|--|----------------------|-------------------|-------------------|
| <b>Rack Mounted</b>                                      | 89mm<br>(3.5 in.)    | 483mm<br>(19 in.) | 457mm<br>(18 in.) |
| <b>Bench Configuration</b><br>(includes handle and feet) | 104mm<br>(4.125 in.) | 483mm<br>(19 in.) | 457mm<br>(18 in.) |

**SHIPPING WEIGHT:** 13kg (28 lbs).  
**DIGITAL I/O:** 25-pin female D-shell.

|  | I/O 1-9           | I/O 10-14         | Vext        |
|--|-------------------|-------------------|-------------|
| <b>Isink, max</b>                      | 5mA               | 250mA             | —           |
| <b>Isouce, max</b>                     | 960µa             | 980µa             | —           |
| <b>Absolute VIN</b>                    | 5.25V →<br>-0.25V | 5.25V →<br>-0.25V | 5V →<br>33V |
| <b>V<sub>IH</sub> min</b>              | 2.2V              | 2.2V              | —           |
| <b>V<sub>IL</sub> max</b>              | 0.7V              | 0.7V              | —           |
| <b>V<sub>OL</sub> max at 5mA Isink</b> | 0.7V              | 0.7V              | —           |
| <b>V<sub>OL</sub> max at Isink max</b> | —                 | 2.3V              | —           |
| <b>V<sub>OH</sub> min, 0.4mA sour</b>  | 2.7V              | 2.4V              | —           |
| <b>Min VIN pulse</b>                   | 2µs               | 10µs              | —           |
| <b>Min VO pulse</b>                    | 1µs               | 50µs              | —           |



**TRIGGERING AND MEMORY:** **Window Filter Sensitivity:** 0.01%, 0.1%, 1%, 10%, or full-scale of range (none).  
**Trigger Delay:** 0 to 99 hrs (10us step size)  
**External Trigger Delay:** <10us.  
**Memory:** Up to 650,000 time-stamped readings with web page disabled. Additional memory available with external “thumb drive”.  
**Non-volatile Memory:** Single user save setup, with up to 75 DMM configurations and ≥600 Channel Patterns (dependent on name length, DMM function and configuration, and pattern image size). Additional memory available with external “thumb drive”.

**MATH FUNCTIONS:** Rel, dB, Limit Test, %, 1/x, and mX + b with user defined displayed.  
**REMOTE INTERFACE:** Ethernet: RJ-45 connector, LXI Class C V1.3, 10/100BT, auto MDIX.  
 GPIB: IEEE-488.1 compliant. Supports IEEE-488.2 common commands and status model topology.  
 USB device (rear panel, type B): USB 2.0, high speed, USBTMC compliant.  
 USB host (front panel, type A): USB 2.0, high speed, support for thumb drives.

**LXI COMPLIANCE:** LXI Class B V1.3 with V2.0 IEEE 1588-2008 precision time protocol.  
**LXI TIMING (applies to scanning) and SPECIFICATION:** Receive LAN[0-7] event delay: n/s. Min, 800us. Typ., n/s Max.  
 Alarm to trigger delay: 25 us. Min., 50us. Typ., n/s Max..  
 Generate LAN[0-7] event: n/s. Min., 800us. Typ., n/s Max.  
 [ minimums are probabilistic and represent a 95% confidence factor ]  
 Clock accuracy: 25 ppm.  
 Synchronization accuracy: < 150ns. [ probabilistic and represent a 95% confidence factor ]  
 Timestamp accuracy: 100 us.  
 Timestamp resolution: 20 ns.

**LANGUAGE:** Embedded Test Script Processor (TSP) accessible from any host interface. Responds to individual Instrument Control Library (ICL) commands. Responds to high-speed test scripts comprised of ICL commands and Test Script Language (TSL) statements (e.g. branching, looping, math, etc.). Able to execute high-speed test scripts stored in memory without host intervention.

**ACCESSORIES SUPPLIED:** Product Information CD-ROM and 3m Ethernet cable.  
**ACCESSORIES AVAILABLE:** 3700 Cards, 3700-MTC cables, 3706-BKPL (analog backplane extender), 3706A-3Y/5Y-EW (extended warranty)  
 C/3706A-3Y (Calibration / Data / ISO 17025), Software IVI/VISA drivers for VB, VC/C++, LabView, TSP Script, Script Builder, and LabWindows/CVI.

**IP CONFIGURATION:** Static, DHCP, or mDNS.  
**PASSWORD PROTECTION:** 11 characters  
**MINIMUM PC HARDWARE:** Intel Pentium 3, 800MHz, 512Mbyte RAM, 210Mbyte disk space or better.  
**OPERATING SYSTEMS /SOFTWARE:** Windows 2000 and XP compatible, supports Web browsers with Java plug-in (requires Java plug-in 1.6 or higher). Web pages served by 3706.

Specifications are subject to change without notice.