

## Rectangular Style Analog Panel Meters

- UL Recognized - File # E91015  
Except for the Wattmeters & Frequency Meters
- Plastic case with Glass Window
- Calibration not affected when mounted on steel
- Three popular sizes:  
2-1/2", 3-1/2", 4-1/2"



For Specifications and Dimensions see the last pages

### Ordering Information

| Frequency, Self-Shielding Movement |         | Not  |                    |                    |
|------------------------------------|---------|------------------------------------------------------------------------------------------|--------------------|--------------------|
| Range                              | Voltage | Model / Size and Catalog Number                                                          |                    |                    |
|                                    |         | 2-1/2"<br>Model 187                                                                      | 3-1/2"<br>Model 87 | 4-1/2"<br>Model 89 |
| 45-55 Hz                           | 120V    | 35136                                                                                    | 35142              | 35148              |
| 55-65 Hz                           | 120V    | 35138                                                                                    | 35144              | 35150              |
| 380-420 Hz                         | 120V    | 35140                                                                                    | 35146              | 35152              |
|                                    |         |                                                                                          |                    |                    |
| 45-55 Hz                           | 240V    | 35137                                                                                    | 35143              | 35149              |
| 55-65 Hz                           | 240V    | 35139                                                                                    | 35145              | 35151              |
| 380-420 Hz                         | 240V    | 35141                                                                                    | 35147              | 35153              |

# Rectangular Style Analog Panel Meters

## Ordering Information

| 4-20 mA Process Meters, Dial Indicates 0-100% |             |       |                             |                |
|-----------------------------------------------|-------------|-------|-----------------------------|----------------|
| Size                                          | Style       | Model | Approx.<br>Impedance (Ohms) | Catalog<br>No. |
| 3-1/2"                                        | Rectangular | 27    | 5.0                         | 35023          |
| 4-1/2"                                        | Rectangular | 29    | 5.0                         | 35024          |

| Wattmeters, Self Shielding Movement |         |      |                                 |                    | Not  |
|-------------------------------------|---------|------|---------------------------------|--------------------|-----------------------------------------------------------------------------------------|
| Range                               | Maximum |      | Model / Size and Catalog Number |                    |                                                                                         |
|                                     | Volts   | Amps | 2-1/2"<br>Model 177             | 3-1/2"<br>Model 77 | 4-1/2"<br>Model 79                                                                      |
| 0-20                                | 150     | .400 | < >                             | < >                | 10714                                                                                   |
| 0-75                                | 150     | 1.0  | 10860                           | 10650              | 10720                                                                                   |
| 0-150                               | 150     | 2.0  | < >                             | < >                | 10730                                                                                   |
| 0-300                               | 150     | 4.0  | < >                             | < >                | 10740                                                                                   |
| 0-600                               | 300     | 4.0  | < >                             | 10680              | 10750                                                                                   |
| 0-750                               | 150     | 10.0 | 10900                           | 10690              | 10760                                                                                   |
| 0-1500                              | 300     | 10.0 | 10910                           | 10700              | 10770                                                                                   |
| 0-3000                              | 300     | 20.0 | 10920                           | 10710              | 10780                                                                                   |
| < > Available on special order      |         |      |                                 |                    |                                                                                         |

# Rectangular Style Analog Panel Meters

## Ordering Information

| DC Voltmeters, Self-Shielding Movement                                                                                                           |                                           |                                 |                    |                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                                                                                                                            | Approx.<br>Impedance<br>(Ohms) @ 60<br>Hz | Model / Size and Catalog Number |                    |                    |
|                                                                                                                                                  |                                           | 2-1/2"<br>Model 127             | 3-1/2"<br>Model 27 | 4-1/2"<br>Model 29 |
| 0-1.5                                                                                                                                            | 1000 Ohms<br>per Volt                     | 09020                           | 07290              | 07620              |
| 0-3                                                                                                                                              |                                           | 09030                           | 07300              | 07630              |
| 0-5                                                                                                                                              |                                           | 09040                           | 07310              | 07640              |
| 0-8                                                                                                                                              |                                           | 09050                           | < >                | 07650              |
| 0-10                                                                                                                                             |                                           | 09060                           | 07330              | 07660              |
| 0-15                                                                                                                                             |                                           | 09080                           | 07350              | 07670              |
| 0-25                                                                                                                                             |                                           | 09090                           | 07360              | 07680              |
| 0-30                                                                                                                                             |                                           | 09100                           | 07370              | 07690              |
| 0-50                                                                                                                                             |                                           | 09110                           | 07380              | 07700              |
| 0-100                                                                                                                                            |                                           | 09130                           | 07400              | 07710              |
| 0-150                                                                                                                                            |                                           | 09140                           | 07410              | 07720              |
| 0-200                                                                                                                                            |                                           | 09160                           | 07430              | 07730              |
| 0-250                                                                                                                                            |                                           | 09170                           | 07440              | 07740              |
| 0-300                                                                                                                                            |                                           | 09180                           | 07450              | 07750              |
| 0-500                                                                                                                                            | 2000 Ohms<br>per Volt                     | 09200                           | 07470              | 07760              |
| 0-750                                                                                                                                            |                                           | < >                             | 07490              | 07770              |
| 0-1000                                                                                                                                           |                                           | < >                             | 07495 *            | 07780 *            |
| 0-1500                                                                                                                                           |                                           | < >                             | 07520 *            | 07790 *            |
| 0-2000                                                                                                                                           |                                           | 09225 *                         | 07530 *            | 07800 *            |
| 0-2500                                                                                                                                           |                                           | < >                             | 07550 *            | 07810 *            |
| 0-3000                                                                                                                                           |                                           | < >                             | 07560 *            | 07820 *            |
| 0-4000                                                                                                                                           |                                           | < >                             | < >                | 07830 *            |
| 0-5000                                                                                                                                           |                                           | < >                             | 07600 *            | 07840 *            |
| < > Available on special order                                                                                                                   |                                           |                                 |                    |                    |
| * External multipliers (Model 183) are furnished on 2-1/2" DC meters 750 volts or higher and on 3-1/2" and 4-1/2" DC Meters 1000 volts or higher |                                           |                                 |                    |                    |

# Rectangular Style Analog Panel Meters

## Ordering Information

| <b>DC Millivoltmeters, Self-Shielding Movement</b> |                                        |                                 |                    |                    |
|----------------------------------------------------|----------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                              | Approx.<br>Impedance<br>(Ohms) @ 60 Hz | Model / Size and Catalog Number |                    |                    |
|                                                    |                                        | 2-1/2"<br>Model 127             | 3-1/2"<br>Model 27 | 4-1/2"<br>Model 29 |
| 0-50                                               | 10.0                                   | 06990                           | 06930              | 06950              |
| 0-100                                              | 20.0                                   | < >                             | 06940              | 06960              |
| < > Available on special order                     |                                        |                                 |                    |                    |

| <b>DC Taut-Band Microammeters, Self-Shielding Movement</b> |                                        |                                 |                     |                     |
|------------------------------------------------------------|----------------------------------------|---------------------------------|---------------------|---------------------|
| Range                                                      | Approx.<br>Impedance<br>(Ohms) @ 60 Hz | Model / Size and Catalog Number |                     |                     |
|                                                            |                                        | 2-1/2"<br>Model 127T            | 3-1/2"<br>Model 27T | 4-1/2"<br>Model 29T |
| 0-10                                                       | 4900                                   | 04246                           | 03839               | 03939               |
| 0-15                                                       | 1960                                   | 04248                           | 03841               | 03941               |
| 0-25                                                       | 1960                                   | 04251                           | 03851               | 03951               |
| 0-50                                                       | 960                                    | 04261                           | 03961               | 03961               |
| 0-100                                                      | 500                                    | < >                             | 03871               | 03971               |
| < > Available on special order                             |                                        |                                 |                     |                     |

# Rectangular Style Analog Panel Meters

## Ordering Information

| DC Microammeters, Self-Shielding Movement |                                        |                                 |                    |                    |
|-------------------------------------------|----------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                     | Approx.<br>Impedance<br>(Ohms) @ 60 Hz | Model / Size and Catalog Number |                    |                    |
|                                           |                                        | 2-1/2"<br>Model 127             | 3-1/2"<br>Model 27 | 4-1/2"<br>Model 29 |
| 0-50                                      | 1800                                   | 04260                           | 03860              | 03960              |
| 0-100                                     | 1800                                   | 04270                           | 03870              | 03970              |
| 0-200                                     | 1100                                   | 04280                           | 03880              | 03980              |
| 0-500                                     | 90                                     | < >                             | 03890              | 03990              |
| 25-0-25                                   | 1800                                   | 04243                           | 03900              | 04000              |
| 50-0-50                                   | 1800                                   | 04245                           | 03910              | 04010              |
| 100-0-100                                 | 1100                                   | 04247                           | 03920              | 04020              |
| 500-0-500                                 | 43                                     | < >                             | 03930              | 04030              |
| < > Available on special order            |                                        |                                 |                    |                    |

| DC Milliammeters, Self-Shielding Movement |                                        |                                 |                    |                    |
|-------------------------------------------|----------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                     | Approx.<br>Impedance<br>(Ohms) @ 60 Hz | Model / Size and Catalog Number |                    |                    |
|                                           |                                        | 2-1/2"<br>Model 127             | 3-1/2"<br>Model 27 | 4-1/2"<br>Model 29 |
| 0-1                                       | 43.0                                   | 05760                           | 04790              | 05070              |
| 0-1.5                                     | 43.0                                   | < >                             | 04810              | 05080              |
| 0-3                                       | 2.0                                    | 05790                           | 04820              | 05090              |
| 0-5                                       | 2.0                                    | 05800                           | 04830              | 05100              |
| 0-10                                      | 10.0                                   | 05810                           | 04840              | 05110              |
| 0-15                                      | 6.6                                    | 05830                           | 04860              | 05120              |
| 0-20                                      | 5.0                                    | < >                             | 04880              | 05130              |
| 0-25                                      | 4.0                                    | 05860                           | 04890              | 05140              |
| 0-50                                      | 2.0                                    | 05880                           | 04910              | 05150              |
| 0-75                                      | 1.3                                    | < >                             | < >                | < >                |
| 0-100                                     | 1.0                                    | 05910                           | 04940              | 05170              |
| 0-150                                     | .66                                    | 05930                           | 04960              | 05180              |
| 0-200                                     | .5                                     | 05940                           | 04980              | 05190              |
| 0-250                                     | .4                                     | < >                             | 05000              | 05200              |
| 0-300                                     | .33                                    | < >                             | 05010              | 05210              |
| 0-500                                     | .2                                     | 05990                           | 05030              | 05220              |
| 0-750                                     | .13                                    | < >                             | 05050              | 05230              |
| 0-1000                                    | .05                                    | 06020                           | 05060              | 05240              |
| < > Available on special order            |                                        |                                 |                    |                    |

# Rectangular Style Analog Panel Meters

## Ordering Information

| <b>DC Ammeters, Self-Shielding Movement</b>                                                                                                                                                           |                                        |                                 |                    |                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                                                                                                                                                                                 | Approx.<br>Impedance<br>(Ohms) @ 60 Hz | Model / Size and Catalog Number |                    |                    |
|                                                                                                                                                                                                       |                                        | 2-1/2"<br>Model 127             | 3-1/2"<br>Model 27 | 4-1/2"<br>Model 29 |
| 0-1                                                                                                                                                                                                   | .050                                   | 01680                           | 00230              | 00450              |
| 0-1.5                                                                                                                                                                                                 | .033                                   | 01690                           | 00240              | 00460              |
| 0-2                                                                                                                                                                                                   | .025                                   | 01709                           | 00250              | 00470              |
| 0-3                                                                                                                                                                                                   | .0166                                  | 01710                           | 00260              | 00480              |
| 0-5                                                                                                                                                                                                   | .010                                   | 01720                           | 00270              | 00490              |
| 0-10                                                                                                                                                                                                  | .005                                   | 01730                           | 00280              | 00500              |
| 0-15                                                                                                                                                                                                  | .0033                                  | 01740                           | 00290              | 00512              |
| 0-25                                                                                                                                                                                                  | .0020                                  | 01750                           | 00300              | 00520              |
| 0-30                                                                                                                                                                                                  | .0017                                  | 01760                           | 00310              | 00530              |
| 0-50                                                                                                                                                                                                  | .001                                   | 01770                           | 00320              | 00540              |
| 0-75                                                                                                                                                                                                  | 10.0                                   | 01780 †                         | 00330 †            | 00550 †            |
| 0-100                                                                                                                                                                                                 | 10.0                                   | 01790 †                         | 00340 †            | 00560 †            |
| 0-150                                                                                                                                                                                                 | 10.0                                   | 01800 †                         | 00350 †            | 00570 †            |
| 0-200                                                                                                                                                                                                 | 10.0                                   | 01810 †                         | < >                | 00580 †            |
| 0-250                                                                                                                                                                                                 | 10.0                                   | < >                             | < >                | 00590 †            |
| 0-300                                                                                                                                                                                                 | 10.0                                   | < >                             | 00380 †            | 00600 †            |
| 0-500                                                                                                                                                                                                 | 10.0                                   | < >                             | 00390 †            | 00610 †            |
| 0-750                                                                                                                                                                                                 | 10.0                                   | < >                             | 00400 †            | 00620 †            |
| 0-1000                                                                                                                                                                                                | 10.0                                   | < >                             | 00410 †            | 00630 †            |
| 15-0-15                                                                                                                                                                                               | .0033                                  | < >                             | < >                | 00640              |
| 30-0-30                                                                                                                                                                                               | .0017                                  | 01880                           | 00430              | 00650              |
| 50-0-50                                                                                                                                                                                               | .001                                   | 01890                           | 00440              | 00660              |
| < > Available on special order                                                                                                                                                                        |                                        |                                 |                    |                    |
| † DC current meters are self-contained for ranges up to and including 50 amperes.<br><br>Higher range DC current meters (50 mV) listed above are calibrated for 5' leads and require external shunts. |                                        |                                 |                    |                    |

# Rectangular Style Analog Panel Meters

## Ordering Information

| <b>AC Microammeters Rectifier Type, Self-Shielding Movement</b> |                                           |                                 |                    |                    |
|-----------------------------------------------------------------|-------------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                                           | Approx.<br>Impedance<br>(Ohms) @ 60<br>Hz | Model / Size and Catalog Number |                    |                    |
|                                                                 |                                           | 2-1/2"<br>Model 147             | 3-1/2"<br>Model 47 | 4-1/2"<br>Model 49 |
| 0-100                                                           | 3400                                      | < >                             | 04120              | 04160              |
| 0-200                                                           | 2400                                      | < >                             | < >                | 04170              |
| 0-300                                                           | 1800                                      | < >                             | 04140              | 04180              |
| 0-500                                                           | 1200                                      | < >                             | 04150              | 04190              |
| < > Available on special order                                  |                                           |                                 |                    |                    |

| <b>AC Milliammeters, Iron Vane Movement</b> |                                           |                                 |                    |                    |
|---------------------------------------------|-------------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                       | Approx.<br>Impedance<br>(Ohms) @ 60<br>Hz | Model / Size and Catalog Number |                    |                    |
|                                             |                                           | 2-1/2"<br>Model 157             | 3-1/2"<br>Model 57 | 4-1/2"<br>Model 59 |
| 0-10                                        | 650.0                                     | < >                             | 05440              | 05510              |
| 0-15                                        | 887.0                                     | < >                             | 05499              | < >                |
| 0-25                                        | 270.0                                     | < >                             | 05460              | 05530              |
| 0-50                                        | 80.0                                      | 06130                           | 05470              | 05540              |
| 0-100                                       | 17.2                                      | 06140                           | 05480              | 05550              |
| 0-250                                       | 3.1                                       | 06150                           | 05490              | 05560              |
| 0-500                                       | .9                                        | 06152                           | 05500              | 05570              |
| < > Available on special order              |                                           |                                 |                    |                    |

# Rectangular Style Analog Panel Meters

## Ordering Information

| AC Milliammeters Rectifier Type, Self Shielding Movement |                                           |                                 |                    |                    |
|----------------------------------------------------------|-------------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                                    | Approx.<br>Impedance<br>(Ohms) @ 60<br>Hz | Model / Size and Catalog Number |                    |                    |
|                                                          |                                           | 2-1/2"<br>Model 147             | 3-1/2"<br>Model 47 | 4-1/2"<br>Model 49 |
| 0-1                                                      | 600                                       | < >                             | 06850              | 06880              |
| 0-2                                                      | 400                                       | < >                             | 06860              | 06890              |
| 0-5                                                      | 200                                       | < >                             | 06870              | 06900              |
| < > Available on special order                           |                                           |                                 |                    |                    |

| AC Ammeters, Iron Vane Movement                                                                  |                                           |                                 |                    |                    |
|--------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                                                                            | Approx.<br>Impedance<br>(Ohms) @ 60<br>Hz | Model / Size and Catalog Number |                    |                    |
|                                                                                                  |                                           | 2-1/2"<br>Model 157             | 3-1/2"<br>Model 57 | 4-1/2"<br>Model 59 |
| 0-1                                                                                              | .213                                      | 02270                           | 01120              | 01290              |
| 0-1.5                                                                                            | .105                                      | < >                             | 01130              | 01302              |
| 0-2                                                                                              | .065                                      | 02290                           | 01140              | 01310              |
| 0-3                                                                                              | .028                                      | 02300                           | 01145              | 01320              |
| 0-5                                                                                              | .008                                      | 02310                           | 01160              | 01330              |
| 0-10                                                                                             | .004                                      | 02320                           | 01170              | 01340              |
| 0-15                                                                                             | .0025                                     | 02330                           | 01180              | 01350              |
| 0-25                                                                                             | .002                                      | 02340                           | 01190              | 01360              |
| 0-30                                                                                             | .0015                                     | 02350                           | 01200              | 01370              |
| 0-50                                                                                             | .001                                      | 02360                           | 01210              | 01380              |
| 0-75                                                                                             | .0002                                     | < >                             | 03434              | 03436              |
| 0-75                                                                                             | .008                                      | 02370 †                         | < >                | < >                |
| 0-100                                                                                            | .008                                      | 02380 †                         | 01230 †            | 01400 †            |
| 0-150                                                                                            | .008                                      | 02390 †                         | 01240 †            | 01410 †            |
| 0-200                                                                                            | .008                                      | < >                             | 01250 †            | 01420 †            |
| 0-250                                                                                            | .008                                      | 02410 †                         | 01260 †            | 01430 †            |
| 0-300                                                                                            | .008                                      | 02420 †                         | 01270 †            | 01440 †            |
| 0-500                                                                                            | .008                                      | 02422 †                         | 01280 †            | 01450 †            |
| < > Available on special order                                                                   |                                           |                                 |                    |                    |
| † These meters are 5 amp meters with scales as indicated and require external donut transformers |                                           |                                 |                    |                    |

# Rectangular Style Analog Panel Meters

## Ordering Information

| AC Voltmeters Rectifier Type, Self Shielding Movement |                                           |                                 |                    |                    |
|-------------------------------------------------------|-------------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                                 | Approx.<br>Impedance<br>(Ohms) @ 60<br>Hz | Model / Size and Catalog Number |                    |                    |
|                                                       |                                           | 2-1/2"<br>Model 147             | 3-1/2"<br>Model 47 | 4-1/2"<br>Model 49 |
| 0-1                                                   | 2000 Ohms<br>per Volt                     | < >                             | 08120              | 08300              |
| 0-3                                                   |                                           | < >                             | 08130              | 08310              |
| 0-5                                                   |                                           | < >                             | < >                | 08320              |
| 0-10                                                  |                                           | < >                             | < >                | 08330              |
| 0-15                                                  |                                           | < >                             | < >                | 08340              |
| 0-50                                                  |                                           | < >                             | < >                | 08350              |
| 0-100                                                 |                                           | < >                             | 08180              | 08360              |
| 0-150                                                 |                                           | < >                             | 08190              | 08370              |
| 0-300                                                 |                                           | < >                             | < >                | 08371              |
| < > Available on special order                        |                                           |                                 |                    |                    |

| AC Voltmeters, Iron Vane Movement                                                                                                               |                                        |                                 |                    |                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------|--------------------|--------------------|
| Range                                                                                                                                           | Approx.<br>Impedance<br>(Ohms) @ 60 Hz | Model / Size and Catalog Number |                    |                    |
|                                                                                                                                                 |                                        | 2-1/2"<br>Model 157             | 3-1/2"<br>Model 57 | 4-1/2"<br>Model 59 |
| 0-1.5                                                                                                                                           | 3                                      | < >                             | < >                | 08710              |
| 0-3                                                                                                                                             | 12                                     | < >                             | 08540              | 08720              |
| 0-5                                                                                                                                             | 33                                     | 09390                           | 08550              | 08730              |
| 0-10                                                                                                                                            | 133                                    | 09400                           | 08566              | 08740              |
| 0-15                                                                                                                                            | 300                                    | 09420                           | 08580              | 08750              |
| 0-25                                                                                                                                            | 833                                    | 09440                           | 08599              | 08760              |
| 0-50                                                                                                                                            | 3,333                                  | 09450                           | 08610              | 08770              |
| 0-100                                                                                                                                           | 16,166                                 | 09460                           | 08620              | 08780              |
| 0-150                                                                                                                                           | 25,000                                 | 09470                           | 08630              | 08790              |
| 0-250                                                                                                                                           | 41,166                                 | 09490                           | 08650              | 08800              |
| 0-300                                                                                                                                           | 50,000                                 | 09500                           | 08660              | 08810              |
| 0-500                                                                                                                                           | 83,333                                 | 09520 †                         | 08680 †            | 08820 †            |
| 0-750                                                                                                                                           | 125,000                                | < >                             | 08690 †            | 08830 †            |
| 0-1000                                                                                                                                          | 166,666                                | < >                             | 08700 †            | 08840 †            |
| † External multipliers, Model 183 are furnished on AC meters having a range of 500 volts or higher. All others have self contained multipliers. |                                        |                                 |                    |                    |
| < > Available on special order                                                                                                                  |                                        |                                 |                    |                    |

## Rectangular Style Analog Panel Meters

| Specifications        |                                                                                                                                                                                                                                   |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy              | ±2% full scale (iron-vane), ±3% (rectifier)                                                                                                                                                                                       |
| Wattmeters:           | ±2% full scale; Compensated meters: ±3% full scale                                                                                                                                                                                |
| Movement              | Model 57, 59, 157 Iron-vane, magnetically damped<br>Wattmeters: Dynamometer<br>All others: Annular, rectifier type, self-shielding                                                                                                |
| Suspension            | Pivot and jewel; "T" styles: taut band                                                                                                                                                                                            |
| Tracking              | ±3%                                                                                                                                                                                                                               |
| Shielding             | Calibration is unaffected by magnetic panel mounting                                                                                                                                                                              |
| Response Time         | 1.5 seconds maximum                                                                                                                                                                                                               |
| Overload (1 sec.)     | 10 times F.S.                                                                                                                                                                                                                     |
| Overload (Continuous) | 1.5 times F.S.                                                                                                                                                                                                                    |
| Repeatability         | 2 %, tautband: .5%                                                                                                                                                                                                                |
| Dial                  | Sharp clear scale. Each dial arc is calibrated to track the specific type of movement used                                                                                                                                        |
| Resistance            | ±15% of meter impedance                                                                                                                                                                                                           |
| Pointer               | Spade pointer with black, matte finish                                                                                                                                                                                            |
| Scale Length          | Models 177 & 157: 1.6" (40.6mm)<br>Models 147, 127 & 127T: 1.8" (45.7mm)<br>Models 57 & 77: 2.3" (58.4mm)<br>Models 27, 27T & 47: 2.5" (63.5mm)<br>Models 59 & 79: 3.50" (89.0mm)<br>Models 29, 29T & 49: 3.9" (99.0mm)           |
| Net Weight            | Models 57 & 157: 5 oz. (0.14 kg)<br>Model 127, 127T & 147: 7 oz. (0.20 kg)<br>Models 27, 27T, 47 & 59: 8 oz. (0.23 kg)<br>Models 77 & 177: 9 oz. (0.26 kg)<br>Models 29, 29T & 49: 11 oz. (0.31 kg)<br>Model 79: 12 oz. (0.34 kg) |

## Rectangular Style Analog Panel Meters

| Frequency Meter Specifications |                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------|
| Accuracy                       | 45-55 Hz $\pm$ 0.3 Hz (120V-240V)                                                             |
|                                | 55-65 Hz $\pm$ 0.3 Hz (120V-240V)                                                             |
|                                | 380-420 Hz $\pm$ 1.2 Hz (120V-240V)                                                           |
| Movement                       | Small core magnet, self-shielding                                                             |
| Suspension                     | Pivot and jewel                                                                               |
| Shielding                      | Calibration is unaffected by magnetic panel mounting                                          |
| Center Scale Value             | 50/60/400 Hz                                                                                  |
| Power Consumption              | 1.6 VA                                                                                        |
| Warm-up Time                   | 5 minutes                                                                                     |
| Max. Input: Voltage (10 sec)   | 150, 120V normal                                                                              |
|                                | 280, 240V normal                                                                              |
| Dial                           | Sharp clear scale.<br>Each dial arc is calibrated to track the specific type of movement used |
| Case                           | High density black plastic                                                                    |
| Operating Temperature          | -4°F to + 149°F (-20°C to + 65°C)                                                             |
| Pointer                        | Spade pointer with black, matte finish                                                        |
| Scale Length                   | Model 187: 1.8" (45.7mm)                                                                      |
|                                | Model 89: 3.5" (89.0mm)                                                                       |
|                                | Model 87: 3.9" (99.0mm)                                                                       |
| Net Weight                     | Model 187: 5 oz. (0.14 kg)                                                                    |
|                                | Model 87: 8 oz. (0.23 kg)                                                                     |
|                                | Model 89: 11 oz. (0.31 kg)                                                                    |

# Rectangular Style Analog Panel Meters

## Dimensions

**3-1/2" Model 27 & 27T, 47, 57, & 87**



**3-1/2" Model 77**



**4-1/2" Model 29 & 29T, 49, 59, & 89**



**4-1/2" Model 79**



**2-1/2" Model 177**



**2-1/2" Model 127 & 127T, 147, 157, & 187**



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|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| <a href="#"><u>02380</u></a> | <a href="#"><u>02320</u></a> | <a href="#"><u>02310</u></a> | <a href="#"><u>02300</u></a> | <a href="#"><u>02340</u></a> | <a href="#"><u>02330</u></a> | <a href="#"><u>02360</u></a> | <a href="#"><u>02390</u></a> | <a href="#"><u>02370</u></a> | <a href="#"><u>06150</u></a> | <a href="#"><u>08540</u></a> | <a href="#"><u>08580</u></a> | <a href="#"><u>06152</u></a> | <a href="#"><u>05510</u></a> | <a href="#"><u>08310</u></a> |
| <a href="#"><u>05530</u></a> | <a href="#"><u>05550</u></a> | <a href="#"><u>08350</u></a> | <a href="#"><u>08330</u></a> | <a href="#"><u>05940</u></a> | <a href="#"><u>09160</u></a> | <a href="#"><u>08700</u></a> | <a href="#"><u>08780</u></a> | <a href="#"><u>08740</u></a> | <a href="#"><u>00350</u></a> | <a href="#"><u>04010</u></a> | <a href="#"><u>07840</u></a> | <a href="#"><u>05810</u></a> | <a href="#"><u>05830</u></a> | <a href="#"><u>07800</u></a> |
| <a href="#"><u>07820</u></a> | <a href="#"><u>07810</u></a> | <a href="#"><u>01320</u></a> | <a href="#"><u>00310</u></a> | <a href="#"><u>00330</u></a> | <a href="#"><u>00390</u></a> | <a href="#"><u>00380</u></a> | <a href="#"><u>00340</u></a> | <a href="#"><u>00320</u></a> | <a href="#"><u>00300</u></a> | <a href="#"><u>03941</u></a> | <a href="#"><u>35153</u></a> | <a href="#"><u>35150</u></a> | <a href="#"><u>35152</u></a> | <a href="#"><u>35151</u></a> |
| <a href="#"><u>35145</u></a> | <a href="#"><u>35147</u></a> | <a href="#"><u>35140</u></a> | <a href="#"><u>35149</u></a> | <a href="#"><u>35144</u></a> | <a href="#"><u>35148</u></a> | <a href="#"><u>35146</u></a> | <a href="#"><u>35142</u></a> | <a href="#"><u>35141</u></a> | <a href="#"><u>35143</u></a> | <a href="#"><u>01690</u></a> | <a href="#"><u>00410</u></a> | <a href="#"><u>00490</u></a> | <a href="#"><u>01680</u></a> | <a href="#"><u>00450</u></a> |
| <a href="#"><u>01290</u></a> | <a href="#"><u>01230</u></a> | <a href="#"><u>35139</u></a> | <a href="#"><u>35136</u></a> | <a href="#"><u>35138</u></a> | <a href="#"><u>01240</u></a> | <a href="#"><u>01200</u></a> | <a href="#"><u>01210</u></a> | <a href="#"><u>01260</u></a> | <a href="#"><u>35137</u></a> | <a href="#"><u>01280</u></a> | <a href="#"><u>01250</u></a> | <a href="#"><u>01270</u></a> | <a href="#"><u>03436</u></a> | <a href="#"><u>03434</u></a> |
| <a href="#"><u>07370</u></a> | <a href="#"><u>10690</u></a> | <a href="#"><u>07330</u></a> | <a href="#"><u>07300</u></a> | <a href="#"><u>10650</u></a> | <a href="#"><u>07360</u></a> | <a href="#"><u>07380</u></a> | <a href="#"><u>10680</u></a> | <a href="#"><u>07310</u></a> | <a href="#"><u>07350</u></a> | <a href="#"><u>07700</u></a> | <a href="#"><u>07720</u></a> | <a href="#"><u>07780</u></a> | <a href="#"><u>07760</u></a> | <a href="#"><u>07740</u></a> |
| <a href="#"><u>05470</u></a> | <a href="#"><u>05480</u></a> | <a href="#"><u>05490</u></a> | <a href="#"><u>07830</u></a> | <a href="#"><u>05440</u></a> | <a href="#"><u>05499</u></a> | <a href="#"><u>10780</u></a> | <a href="#"><u>10714</u></a> | <a href="#"><u>10750</u></a> | <a href="#"><u>10720</u></a> |                              |                              |                              |                              |                              |