



- **UL Recognized - File # E91015**
Except for the Wattmeters & Frequency Meters
- **Glass window for optimum viewing**
- **Rugged black plastic case**
- **Black knife-edge pointer for precision reading**

Frequency Meter Specifications

| | |
|-----------------------------|--|
| Accuracy | 45-55Hz $\pm 0.3\text{Hz}$ (120V-240V) 55-65Hz $\pm 0.3\text{Hz}$ (120V-240V) 380-420Hz $\pm 1.2\text{Hz}$ (120V-240V) |
| Movement | Small core magnet, self-shielding |
| Suspension | Pivot and jewel |
| Tracking | $\pm 3\%$ |
| Shielding | Calibration is unaffected by magnetic panel mounting. |
| Center Scale Value | 50/60/400Hz |
| Power Consumption | 1.6VA |
| Max. Input Voltage (10 sec) | 150, 120V normal 280, 240V normal |
| Dial | Each dial arc is calibrated to track the specific type of movement used. |
| Operating Temperature | -4°F to $+149^{\circ}\text{F}$ (-20°C to $+65^{\circ}\text{C}$) |
| Case | High density black plastic |
| Pointer | Knife-edge, with black matte finish |
| Scale Length | Model 2182: 1.88" (47.2mm) Model 2183: 2.48" (63.0mm) Model 2184: 3.68" (93.5mm) |
| Net Weight | Model 2182: 5oz (0.14kg) Model 2183: 6oz (0.17kg) Model 2184: 9oz (0.26kg) |
| Warm-up Time | 5 minutes |

Watt Meter Specifications

| | |
|-----------------------|---|
| Accuracy | $\pm 2\%$ F.S.; Compensated Meters: $\pm 3\%$ F.S. |
| Movement | Dynamometer |
| Suspension | Pivot and jewel |
| Tracking | $\pm 3\%$ |
| 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% |
| Dial | Each dial arc is calibrated to track the specific type of movement used. $\pm 15\%$ of meter impedance |
| Resistance | -4°F to $+149^{\circ}\text{F}$ (-20°C to $+65^{\circ}\text{C}$) |
| Operating Temperature | High density black plastic |
| Case | Knife-edge, with black matte finish |
| Pointer | Model 2173: 2.48" (63.0mm) |
| Scale Length | Model 2174: 3.68" (93.5mm) Model 2173: 9oz (0.26kg) Model 2174: 13oz (0.37kg) |
| Net Weight | |

Specifications for Other Meters

| | |
|-----------------------|--|
| Accuracy | $\pm 2\%$ F.S. Iron Vane, $\pm 3\%$ F.S. Rectified |
| Movement | Models 2152, 2153, 2154: Iron-vane, magnetically damped. 2121 and 2121T: small core magnet, all others Annular, self-shielding |
| Suspension | Pivot and jewel except for "T" models which have taut band movement |
| Tracking | $\pm 3\%$ |
| 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% pivot and jewel, 0.5% taut band |
| Dial | Each dial arc is calibrated to track the specific type of movement used. $\pm 15\%$ of meter impedance |
| Resistance: | -4°F to $+149^{\circ}\text{F}$ (-20°C to $+65^{\circ}\text{C}$) |
| Operating Temperature | High density black plastic |
| Case | Knife-edge, with black matte finish |
| Pointer | Model 2121 & 2121T: 1.25" (31.7mm) |
| Scale Length | Model 2152: 1.86" (47.2mm) Model 2122, 2122T, 2142: 2.07" (52.7mm) Model 2153: 2.48" (63.0mm) Model 2123, 2123T, 2143: 2.75" (69.8mm) Model 2154: 3.68" (93.5mm) Model 2124, 2124T, 2144: 4.09" (103.9mm) |
| Net Weight | Model 2121 & 2121T: 2oz (0.06kg) Model 2152: 5oz (0.14kg) Model 2153: 6oz (0.17kg) Model 2122, 2122T, 2142: 7oz (0.20kg) Model 2123, 2123T, 2143: 8oz (0.23kg) Model 2154: 9oz (0.26kg) Model 2124, 2124T, 2144: 11oz (0.31kg) |

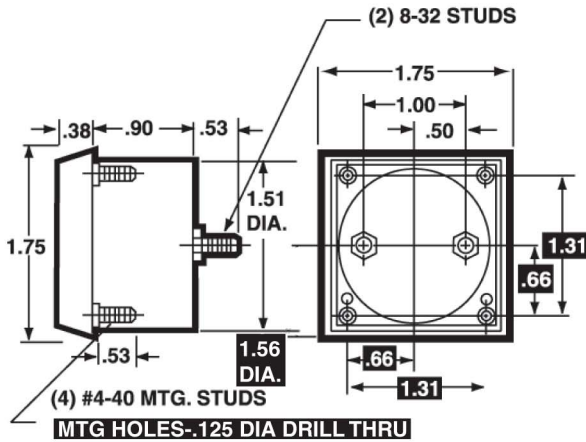
Century Style Analog Panel Meters



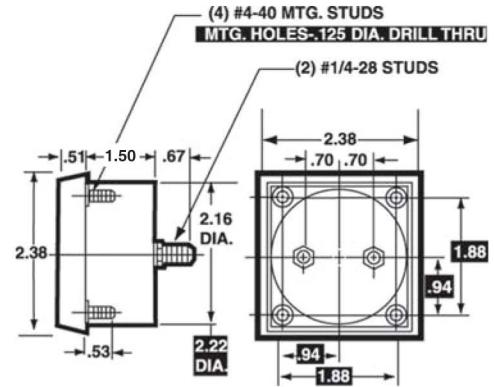
Dimensions

1 = Panel Meter Cut-out Dimensions

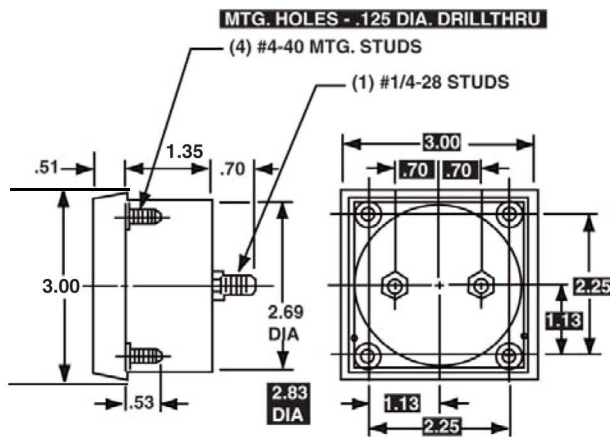
1-1/2"-Models 2121, 2121T, 2141,



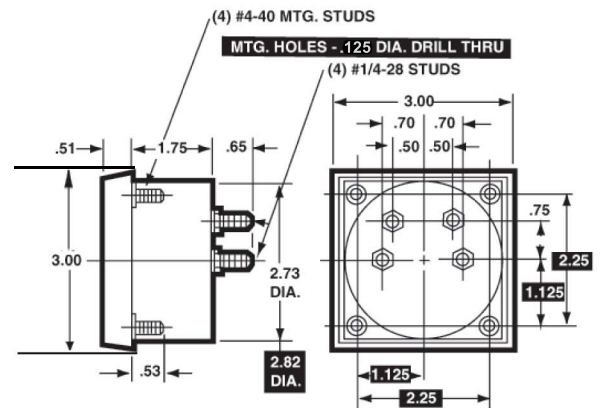
2-1/2"-Models 2122, 2122T, 2142, 2152, 2182



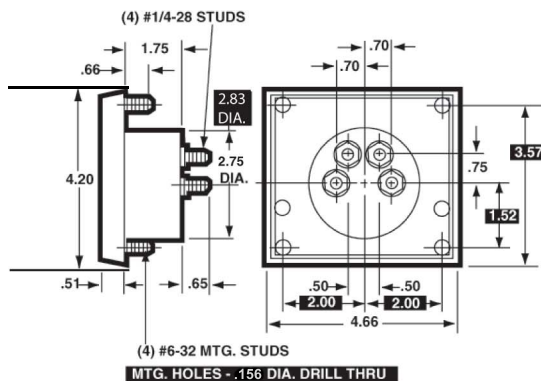
3-1/2"-Models 2123, 2123T, 2143, 2153, 2183



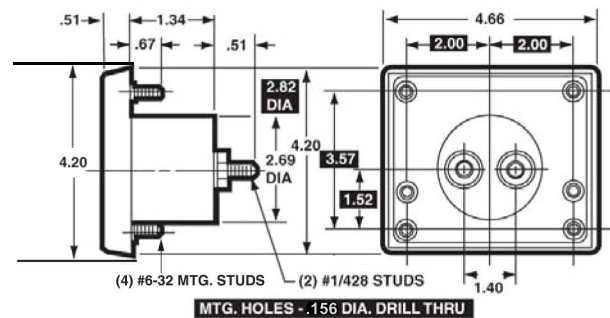
3-1/2"-Model 2173



4-1/2"-Model 2174



4-1/2"-Model 2124, 2124T, 2144, 2154, 2184





Century Style Analog Panel Meters

Ordering Information

AC Milliammeters, Iron-Vane Movement

| Range | Approx. Impedance (ohms) @ 60 Hz | Model/Size and Catalog Number | | |
|-------|----------------------------------|-------------------------------|-------------------|-------------------|
| | | 2-1/2" Model 2152 | 3-1/2" Model 2153 | 4-1/2" Model 2154 |
| 0-10 | 1,650 | 17680 | <> | 17760 |
| 0-50 | 80 | 17681 | 17716 | 17761 |
| 0-100 | 17.2 | 17682 | 17717 | 17762 |
| 0-250 | 3.15 | 17683 | 17718 | 17763 |
| 0-500 | 0.9 | 17684 | 17719 | 17764 |

AC Ammeters, Iron-Vane Movement

| Range | Approx. Impedance (ohms) @ 60 Hz | Model/Size and Catalog Number | | |
|-------|----------------------------------|-------------------------------|-------------------|-------------------|
| | | 2-1/2" Model 2152 | 3-1/2" Model 2153 | 4-1/2" Model 2154 |
| 0-1 | .213 | 17665 | 17695 | 17740 |
| 0-1.5 | .105 | 17666 | <> | <> |
| 0-2 | .065 | <> | 17697 | 17742 |
| 0-3 | .028 | 17667 | 17698 | 17743 |
| 0-5 | .008 | 17668 | 17699 | 17744 |
| 0-10 | .004 | 17669 | 17700 | 17745 |
| 0-10 | .008 | <> | 35081† | 35085† |
| 0-15 | .0025 | 17670 | 17701 | 17746 |
| 0-25 | .002 | 17671 | 17702 | 17747 |
| 0-25 | .008 | <> | 35082† | 35086† |
| 0-30 | .0015 | 17672 | 17703 | 17748 |
| 0-50 | .001 | 17673 | 17704 | 17749 |
| 0-50 | .008 | <> | 35083† | 35087† |
| 0-75 | .0002 | <> | 17710 | 17755 |
| 0-75 | .008 | <> | 35084† | 35088† |
| 0-80 | .008 | <> | 35036† | <> |
| 0-100 | .008 | 17674† | 17706† | 17751† |
| 0-150 | .008 | <> | 17707† | 17752† |
| 0-200 | .008 | <> | 17708† | 17753† |
| 0-300 | .008 | <> | 17709† | 17754† |

<> Available on special order.

† These meters are 5-amp meters, to be used with an external current transformer.

AC Dual Range Ammeter/Voltmeter, Iron-Vane Movement

| Range | Approx. Impedance (ohms) @ 60 Hz | Model/Size and Catalog Number | | |
|--------|----------------------------------|-------------------------------|-------------------|-------------------|
| | | 2-1/2" Model 2152 | 3-1/2" Model 2153 | 4-1/2" Model 2154 |
| 0-150V | 15,030 | - | 17694 | 17739 |
| 0-5A | 0.021 | - | 17694 | 17739 |

AC Voltmeters, Iron-Vane Movement

| Range | Approx. Impedance (Ohms) @ 60 Hz | Model/Size and Catalog Number | | |
|--------|----------------------------------|-------------------------------|-------------------|-------------------|
| | | 2-1/2" Model 2152 | 3-1/2" Model 2153 | 4-1/2" Model 2154 |
| 0-5 | 33 | <> | 17725 | <> |
| 0-10 | 133 | 17685 | 17726 | 17771 |
| 0-15 | 300 | 17686 | 17727 | 17772 |
| 0-25 | 833 | 17687 | 17728 | 17773 |
| 0-50 | 3,333 | 17688 | 17729 | 17774 |
| 0-100 | 16,666 | <> | 17730 | 17775 |
| 0-150 | 25,000 | 17690 | 17731 | 17776 |
| 0-250 | 41,166 | 17691 | 17732 | 17777 |
| 0-300 | 50,000 | 17692 | 17733 | 17778 |
| 0-500† | 83,333 | <> | 17734† | 17779† |

† 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.

AC Voltage Meters Rectifier Type, Self-Shielding Movement

| Range | Approx. Impedance (Ohms) @ 60 Hz | Model/Size and Catalog Number | | |
|-------|----------------------------------|-------------------------------|-------------------|-------------------|
| | | 2-1/2" Model 2142 | 3-1/2" Model 2143 | 4-1/2" Model 2144 |
| 0-5 | 2000 ohms per volt | 17460 | 17542 | 17640 |
| 0-10 | | <> | 17543 | 17641 |
| 0-15 | | <> | 17544 | 17642 |
| 0-50 | | <> | 17545 | 17643 |
| 0-150 | | 17462 | 17546 | 17644 |
| 0-300 | <> | <> | 17645 | |

<> Available on special order.

DC Milliammeters, Self-Shielding Movement

| Range | Approx. Impedance (Ohms) @ 60 Hz | Model/Size and Catalog Number | | | |
|--------|----------------------------------|-------------------------------|-------------------|-------------------|-------------------|
| | | 1-1/2" Model 2121 | 2-1/2" Model 2122 | 3-1/2" Model 2123 | 4-1/2" Model 2124 |
| 0-1 | 43.0 | 17825 | 17430 | 17510 | 17600 |
| 0-3 | 2.0 | <> | 17431 | 17511 | 17601 |
| 0-5 | 2.0 (20)† | 17826 | 17432 | 17512 | 17602 |
| 0-10 | 10.0 (2.2)† | 17827 | 17433 | 17513 | 17603 |
| 0-15 | 6.6 (2.2)† | 17828 | 17434 | <> | <> |
| 0-20 | 5.0 | <> | <> | 17515 | <> |
| 0-25 | 4.0 (6.0)† | 17829 | 17436 | 17516 | 17606 |
| 0-50 | 2.0 (3.0)† | 17830 | 17437 | 17517 | 17607 |
| 0-100 | 1.0 (1.5)† | 17832 | 17438 | 17518 | 17608 |
| 0-150 | .66 (1.0)† | 17833 | 17439 | 17519 | 17609 |
| 0-200 | .50 (.75)† | 17834 | 17440 | 17520 | 17610 |
| 0-250 | .40 (.60)† | 17835 | 17441 | 17521 | 17611 |
| 0-300 | .33 (.50)† | 17836 | 17442 | 17522 | 17612 |
| 0-500 | .20 (.30)† | 17837 | 17443 | 17523 | 17613 |
| 0-750 | .13 | <> | <> | 17524 | 17614 |
| 0-1000 | .05 | <> | 17444 | <> | 17615 |

<> Available on special order.

† Resistances of Model 2121 shown in ()

DC Microammeters, Self-shielding Movement

| Range | Approx. Impedance (Ohms) @ 60 Hz | Model/Size and Catalog Number | | | |
|-----------|----------------------------------|-------------------------------|-------------------|-------------------|-------------------|
| | | 1-1/2" Model 2121 | 2-1/2" Model 2122 | 3-1/2" Model 2123 | 4-1/2" Model 2124 |
| 0-50 | 1800 (5500)* | 17815 | 17418 | 17499 | 17589 |
| 0-100 | 1800 | 17816 | 17420 | 17501 | 17591 |
| 0-200 | 1100 | 17818 | 17422 | 17503 | 17593 |
| 0-500 | 90 (190)* | 17819 | 17424 | 17505 | 17595 |
| 25-0-25 | 1800 (5500)* | 17820 | <> | 17506 | 17596 |
| 50-0-50 | 1800 | 17821 | 17425 | 17507 | 17597 |
| 100-0-100 | 1100 | 17822 | 17426 | 17508 | 17598 |
| 500-0-500 | 43 | 17823 | 35063 | 17509 | 17599 |

* Resistances of Model 2121 shown in ().

<> Available on special order.

Century Style Analog Panel Meters



Taut Band DC Microammeters, Self-shielding Movement

| Range | Approx. Impedance (Ohms) @ 60 Hz | Model/Size and Catalog Number | | |
|-------|----------------------------------|-------------------------------|--------------------|--------------------|
| | | 2-1/2" Model 2122T | 3-1/2" Model 2123T | 4-1/2" Model 2124T |
| 0-10 | 4900 | 17415 | 17496 | 17586 |
| 0-15 | 1960 | 17416 | 17497 | 17587 |
| 0-25 | 1960 | 17417 | 17498 | 17588 |
| 0-50 | 960 | 17419 | 17500 | 17590 |
| 0-100 | 500 | 17421 | 17502 | 17592 |
| 0-200 | 234 | 17423 | <> | 17594 |

<> Available on special order

DC Ammeters, Self-shielding Movement

| Range | Approx. Impedance (Ohms) @ 60 Hz | Model/Size and Catalog Number | | | |
|---------|----------------------------------|-------------------------------|-------------------|-------------------|-------------------|
| | | 1-1/2" Model 2121 | 2-1/2" Model 2122 | 3-1/2" Model 2123 | 4-1/2" Model 2124 |
| 0-1 | .050 | 17800 | 17400 | 17475 | 17565 |
| 0-1.5 | .003 | <> | 17401 | 17476 | <> |
| 0-2 | .025 | 17801 | 17402 | 17477 | 17567 |
| 0-3 | .0166 | 17802 | 17403 | 17478 | 17568 |
| 0-5 | .010 | 17803 | 17404 | 17479 | 17569 |
| 0-10 | .005 | 17805 | 17405 | 17480 | 17570 |
| 0-15 | .0033 | 17806† | 17406 | 17481 | 17571 |
| 0-25 | .0020 | 17807† | 17407 | 17482 | 17572 |
| 0-30 | .0017 | <> | 17408 | 17483 | 17573 |
| 0-50 | .001 | 17808† | 17409 | 17484 | 17574 |
| 0-100 | 10.0 | <> | 17410† | 17485† | 17575† |
| 0-150 | 10.0 | <> | <> | 17486† | 17576† |
| 0-200 | 10.0 | <> | 17412† | 17487† | 17577† |
| 0-300 | 10.0 | <> | - | 17488† | 17578† |
| 0-500 | 10.0 | <> | - | 17489† | 17579† |
| 2-0-2 | .025 | <> | - | 35064 | - |
| 5-0-5 | .010 | <> | - | 35072 | - |
| 15-0-15 | .0033 | <> | - | 17490 | - |
| 30-0-30 | .0017 | <> | - | 17491 | - |

†1-1/2" DC current meters are self-contained through 10 amps; higher ranges are supplied as 50mV meters and require an external shunt. 2-1/2", 3-1/2" and 4-1/2" meters are self-contained through 50 amps. Higher ranges are 50 mv and require use of an external shunt.

Wattmeters/Dynamometer Type, Not

| Range | Maximum | | Model/Size and Catalog Number | |
|--------|---------|-------|-------------------------------|-------------------|
| | Volts | Amps | 3-1/2" Model 2173 | 4-1/2" Model 2174 |
| 0-10 | 150 | .175 | 17875* | 17890* |
| 0-20 | 150 | .400 | 17876 | 17891* |
| 0-30 | 150 | 0.650 | 17877* | 17892* |
| 0-30 | 300 | 0.300 | 17879* | 17894* |
| 0-50 | 300 | 0.500 | 17880* | 17895* |
| 0-75 | 150 | 1.0 | 17881 | 17896 |
| 0-150 | 150 | 2.0 | 17882 | 17897 |
| 0-300 | 150 | 4.0 | 17883 | 17898 |
| 0-600 | 300 | 4.0 | 17884 | 17899 |
| 0-750 | 150 | 10.0 | 17885 | 17900 |
| 0-1500 | 300 | 10.0 | 17886 | 17901 |
| 0-3000 | 300 | 20.0 | 17887 | 17902 |

* Compensated wattmeters: calibrated for either magnetic or non-magnetic panels and for a frequency of 25-125Hz.

Percent Motor Load Meters, Self-shielding Movement

| Type | Rating | Model/Size and Catalog Number | | | |
|-------------|--------|-------------------------------|-----------|----------------|-----------|
| | | 3-1/2" Model # | Catalog # | 4-1/2" Model # | Catalog # |
| DC (Note 1) | 30 mV | 2123 | 17564 | 2124 | 17637 |
| AC (Note 2) | 5 amps | 2153 | 17711 | 2154 | 17756 |

1. These DC meters require an external shunt, and an 8 to 10 Ω 2W wire-wound potentiometer (customer supplied).
2. These AC meters require use of a current transformer

Frequency Meters, Self-shielding Movement, Not

| Range | Approx. Impedance (Ohms) @ 60 Hz | Model/Size and Catalog Number | | |
|------------|----------------------------------|-------------------------------|-------------------|-------------------|
| | | 2-1/2" Model 2182 | 3-1/2" Model 2183 | 4-1/2" Model 2184 |
| 45-55 Hz | 120V | 35118 | 35124 | 35130 |
| 55-65 Hz | 120V | 35120 | 35126 | 35132 |
| 380-420 Hz | 120V | 35122 | 35128 | 35134 |
| 45-55 Hz | 240V | 35119 | 35125 | 35131 |
| 55-65 Hz | 240V | 35121 | 35127 | 35133 |
| 380-420 Hz | 240V | 35123 | 35129 | 35135 |

DC Millivoltmeters, Self-shielding Movement

| Range | Approx. Impedance (Ohms) @ 60 Hz | Model/Size and Catalog Number | | |
|---------|----------------------------------|-------------------------------|-------------------|-------------------|
| | | 2-1/2" Model 2122 | 3-1/2" Model 2123 | 4-1/2" Model 2124 |
| 0-50 | 10.0 | 17472 | 17540 | 17636 |
| 50-0-50 | 20.0 | <> | 17541 | 17635 |

<> Available on special order

Century Style Analog Panel Meters



DC Voltage Meters, Self-shielding Movement

| Range | Approx. Impedance (Ohms) @ 60 Hz | Model/Size and Catalog Number | | | |
|--------|----------------------------------|-------------------------------|-------------------|-------------------|-------------------|
| | | 1-1/2" Model 2121 | 2-1/2" Model 2122 | 3-1/2" Model 2123 | 4-1/2" Model 2124 |
| 0-5 | | 17840 | 17445 | 17525 | 17618 |
| 0-8 | | <> | <> | <> | 17619 |
| 0-10 | | 17842 | 17446 | 17527 | 17620 |
| 0-15 | | 17843 | 17447 | 17528 | 17621 |
| 0-25 | | 17844 | 17448 | 17529 | 17622 |
| 0-30 | | 17845 | 17449 | 17530 | 17623 |
| 0-50 | 1000 ohms per volt | 17846 | 17450 | 17531 | 17624 |
| 0-100 | | 17848 | 17451 | 17532 | 17625 |
| 0-150 | | 17849 | 17452 | 17533 | 17626 |
| 0-200 | | <> | <> | 17534 | 17627 |
| 0-250 | | <> | <> | 17535 | <> |
| 0-300 | | - | 17455 | 17536 | 17629 |
| 0-300 | | 17850 | <> | <> | <> |
| 0-500 | 2000 ohms per volt | 17851* | 17456 | 17537 | 17630 |
| 0-750 | | <> | <> | 17538 | 17631 |
| 0-1000 | | <> | 17458* | 17539* | 17632* |

*External multipliers (Model 183) are furnished on 1-1/2" DC meters 500 volts or higher; 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. All others have self-contained multipliers.
 <> Available on special order.

4-20 DCmA Process Meters

| Size | Scale | Model | Catalog No. |
|--------|--------|-------|-------------|
| 3-1/2" | 0-100% | 2123 | 35027 |
| 4-1/2" | 0-100% | 2124 | 35028 |

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