



AVO® M3000S Series

Safety-Zoned Datalogging Multimeters

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A series of high-performance multimeters with a unique range of safety features, downloading capability and all with advanced technical capabilities, suiting them to a wide scope of applications. Built with the expected AVO quality, the M3000 series is designed for safety, robustness and usability.

RELIABLE & SAFE

- SafetyZoned inputs—only the appropriate connections can be made for the range selection, because shutters on the inputs are mechanically linked to the function switch
- All ranges overload protected to at least 500V, to safeguard both user and instrument from damage, designed with fuses, clamping diodes and overvoltage arresters all specified for safety
- Fuse Protection on all current ranges, together with visible & audible warning of overload before fuse blowing, and LCD warning of blown fuse once blown
- IEC 1010 Cat III 600V safety rating (1000V Cat II). Independently approved for CSA conformity
- Rubber Holster— the M3000S series are all supplied with rubber holsters, giving even more shock resistance than the robust mechanical design of the unit
- IP54 Sealed— protected against dust & water ingress, yet still provides simple & safe access for battery & fuse replacement
- EMC performance – magnetic shielding and electrical design reduces effects from electrically noisy environments

POWERFUL AND FLEXIBLE IN USE

- Up to 0.02% accuracy
- Infra-red data output on all S series, giving memory storage and PC download via the Si-232 memory pod
- Analogue-style Pointer on LCD (not M3045)
- Clear 15mm-high digits on LCD (12mm & triple display on M3045)
- Data Hold waits for and records the next stable reading
- 'Min-Max' feature catches surges, changes, intermittent signals (time stamped on M3008S & M3045)
- Temperature measurement— suitable for Pt-100 / Pt-1000 probes, such as AVO MTP5
- True-RMS response for accuracy on non-linear loads: M3006S, M3008S, M3045S

REDUCING THE COST OF OWNERSHIP

- AVO-quality design and manufacture
- Extensive safety features built in reduce the likelihood of damage or the need to replace fuses etc.
- Calibration certificate supplied with each instrument, tracing back to international standards, giving confidence in your measurements and removing initial requirement for external calibration.
- Infra-red data output— (even bi-directional on the M3045) speeds calibration with multifunction calibrators.
- AVO Warranty to give you peace of mind.
- Technical support for your AVO product

TURN MULTIMETERS INTO A MULTI-CHANNEL RECORDER

Si232 Multimeter Memory Pods

- clips on top of M3000S multimeter
- stores up to nearly 1m measurements
- display and summarise logged readings
- RS232 two-way communication
- real-time clock for timestamping results
- simple menu driven
- sampling intervals settable from 50ms to 1min
- connect up to 10 memory pods together for PC download

AVOwins-DMM Software

- Runs under MS Windows 3.0+, 95 & NT
- Download and analyse results from up to 10 M3000S multimeters
- Download online or after logging completed
- multiple display options—
 - *mimic multimeter display for up to 4 channels*
 - *4-channel Y-t recorder*
 - *3-channel X-Y plotter*
 - *10-channel data logger*
- perform calculations on data and use with original data
- linearise readings from non-linear transducers (eg 4-20mA controllers)
- trigger recording by time, or by excursions outside set limits
- sample intervals settable from 50ms to 1 hour (online mode)

M3000S SPECIFICATIONS

...at a glance

	M3004S	M3005S	M3006S	M3008S	M3045S	M3050P
True RMS			•	•	•	•
Current	a.c., d.c.	a.c., d.c.	a.c., d.c., (a.c.+d.c.)	a.c., d.c., (a.c.+d.c.)	a.c., d.c., (a.c.+d.c.)	a.c., d.c., (a.c.+d.c.)
Voltage	a.c., d.c.	a.c., d.c.	a.c., d.c., (a.c.+d.c.)	a.c., d.c., (a.c.+d.c.)	a.c., d.c., (a.c.+d.c.)	a.c., d.c., (a.c.+d.c.)
Resistance	•	•	•	•	•	•
Temperature	•	•	•	•	•	•
Frequency		•	•	•	•	•
Capacitance		•	•	•	•	•
Duty Cycle		•	•			
Event/Count Time				•	•	•
Infrared Output	•	•	•	•	•	•
MIN/MAX	•	•	•	•	•	•
Auto DATA Hold	•	•	•	•	•	•
Lead resistance	•	•	•	•	•	•
Display Counts	3100	3100	31 00	31 000	310 000	310 000
Analogue Pointer	•	•	•	•	(triple display)	(triple display)
IEC 1010	Cat III, 600V	Cat III, 600V	Cat III, 600V	Cat III, 600V	Cat III, 600V	Cat III, 600V
Rubber Holster	•	•	•	•	•	•

...the detail

	M3004S	M3005S	M3006S	M3008S	M3045S	M3050P
True RMS			CF = 5 max	CF = 5 max	CF = 5 max	CF = 5 max
Infrared Output	•	•	•	•	•	•
Voltage DC	30.00mV...1000V (0.25%)	30.00mV...1000V (0.25%)	30.00mV...1000V (0.1%)	300.00mV...1000.0V (0.05%)	300.00mV...1000.0V (0.02%)	300.00mV...1000.0V (0.02%)
Voltage AC/ (AC + DC)	3.000V...1000V (0.75%)	3.000V...1000V (0.75%)	3.000V...1000V (0.75%)	300.00V...1000.0V (0.3%)	300.00V...1000.0V (0.2%)	300.00V...1000.0V (0.2%)
Current DC	300.0µA..10.00A (1%)	300.0µA..10.00A (1%)	300.0µA..10.00A (0.5%)	300.00µA..10.000A (0.05%)	300.000µA..10.000A (0.05%)	300.000µA..10.000A (0.05%)
Current AC (AC + DC)	300.0µA..10.00A (1.5%)	300.0µA..10.00A (1.5%)	300.0µA..10.00A (1.5%)	300.00µA..10.000A (0.5%)	300.00µA..10.000A (0.5%)	300.00µA..10.000A (0.5%)
Resistance	30.00 . 30.00M (0.4%)	30.00 . 30.00M (0.4%)	30.00 . 30.00M (0.2%)	300.00 ...30.000M (0.1%)	300.000 ...30.0000M (0.05%)	300.000 ...30.0000M (0.05%)
Capacitance		30.00nF..30.00µF (1.0%)	30.00nF..30.00µF (1.0%)	3.000nF..10000µF (1.0%)	3.000nF..30.00mF (1.0%)	3.000nF..30.00mF (1.0%)
Frequency		300.0Hz..300.0kHz (0.5%)	300.0Hz..300.0kHz (0.5%)	300.00Hz...100.00kHz	300.000Hz.300.000kHz	300.000Hz.300.000kHz
Temperature	-200°C..+850°C	-200°C..+850°C	-200°C..+850°C	-200°C..+850°C	-200°C..+1372°C	-270°C..+1372°C
Probes	Pt100, Pt1000	Pt100, Pt1000	Pt100, Pt1000	Pt100, Pt1000	Pt100, Pt1000,K,J,T	Pt100, Pt1000,K,J,T
Duty Cycle		2%..98%	2%..98%			
W, VA, VAR						1.000mW...10.0000kW

Optional Accessories

MLK-1	Multimeter Logging Kit (1 Memory Pod, AVOwins-DMM software, RS232 lead)
MLK-4	Multimeter Logging Kit (4 Memory Pods, AVOwins-DMM software, RS232 lead)
Si-232	Multimeter Memory Po
MTP-5	Temperature probe Pt100:-150°C to 650°C
DCM2031	400Aac current clamp adaptor
Croc Clips	1 black, 1 red crocodile clip
FPK 4	Fused probe lead set 60C
FPK 3	Fused probe lead set 100C
NA/4	4.2V power pack (3045/50 only)
BD-232	Bi-directional RS232 interface

All the instruments are supplied complete with: protective rubber holster, test leads set, calibration certificate traceable to national standards, valid for three years from date of manufacture, batteries, user guide. Best accuracies quoted, normally valid over majority of ranges.

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