

# Mini-Max M235 & M245 Digital Panel Meters



- 3/64 DIN Indicator
- Unique mounting bracket allows stacking of multiple units
- Screw terminal connectors for easy installation
- LCD: 3-1/2 or 4-1/2 digit, 0.5" high LCD display with optional negative image, bright red backlighting
- LED: 3-1/2 digit, 0.56" high display
- LED: 4-1/2 digit, 0.40" high display
- Limited range display scaling

LCD



LED



## INPUTS

### DC Voltage

Range	Resolution M235	Resolution M245	Input Impedance	Max Input Infused
200mV	100µV	10µV	10MEG	100VDC
2V	1mV	100µV	10MEG	250VDC
20V	10mV	1mV	10MEG	250VDC
200V	100mV	10mV	9.9MEG	250VDC
600V	1V	100mV	9.9MEG	600VDC

### DC/AC TRMS Current

Range	Resolution		LCD		LED	
	M235	M245	Voltage Drop	Max Input Unfused	Voltage Drop	Max Input Unfused
200uA	100uA	10nA	200mVDC	10mA	200mVDC	6mA
2mA	1uA	100nA	200mVDC	40mA	200mVDC	20mA
20mA	10uA	1uA	200mVDC	100mA	200mVDC	60mA
200mA	100nA	10uA	200mVDC	400mA	200mVDC	300mA
2A	1mA	100uA	200mVDC	3A	200mVDC	2.6A
5A	10mA	1mA	50mVDC	6A	100mVDC	6A

### AC TRMS Voltage

Range	Resolution M235	Resolution M245	Input Impedance	Max Input Infused
200mV	100µV	10µV	500K	10VAC
2V	1mV	100µV	100K	100VAC
20V	10mV	1mV	1MEG	200VAC
200V	100mV	10mV	1MEG	200VAC
270V	1V	100mV	1MEG	270VAC
600V	1V	100mV	9.9MEG	600VAC

### DC Process

Range	Resolution M235	Resolution M245	Voltage Drop	Max Input Infused
4 to 20mA	0.10%	0.01%	200mVdc	60mA
1 to 5Vdc	0.10%	0.01%	Input Impedance	250VDC
			10MEG	
0 to 10Vdc	0.10%	0.01%	10MEG	250VDC
0 to 100Vdc	0.10%	0.01%	10MEG	250VDC

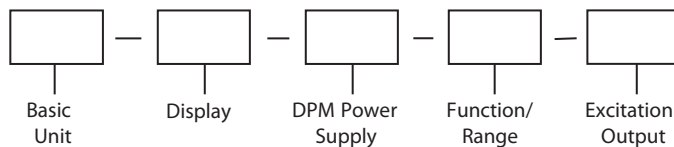
Specifications	LCD		LED	
	M235	M245	M235	M245
<b>DISPLAY</b>	7 Segment			
Type:	7 Segment			
Height:	0.5" (12.7mm)		0.56" (14.2mm) / 0.4" (10.2mm)	
Decimal point (Selectable):	3 position		4 position	
Overrange indication:	Most significant digit = "1"		Blinking Display	
Backlighting:	Optional negative image, Red Backlight		NA	
Polarity:	Auto with "-" indication; "+" implied			
<b>POWER REQUIREMENTS</b>	85-250VAC @40-440Hz			
AC Volt:	85-250VAC @40-440Hz			
DC Volt:	9-32DCV		NOT AVAILABLE	
<b>POWER CONSUMPTION</b>	LCD 4.0VA(2.4W) Max / 3.6VA (2.16W) Max			
85-250VAC:	LCD 4.0VA(2.4W) Max		3.6VA (2.16W) Max	
9-32DCV:	LCD 3 W Max		NOT AVAILABLE	
<b>ISOLATION</b>	250Vrms Max			
<b>ACCURACY @ 25°C</b>	NOT AVAILABLE			
200 Hz:	±0.2% of input ± 0.2Hz		NOT AVAILABLE	
2 KHz:	±0.2% of input ± 2 Hz		NOT AVAILABLE	
DC V & A:	±(0.1% of Reading ± 1 count)		±(0.04% of Reading ± 1 count) / ±(0.1% of Reading ± 1 count) / ±(0.04% of Reading ± 1 count)	
DC 2A:	±(0.25% of Reading ± 1 count)			
DC 5A:	±(0.5% of Reading ± 1 count)			
AC TRMS V & A:	±(0.5% of Reading + 5 count) (50 Hz - 2KHz)		±(0.5% of Reading + 50 count) (50 Hz - 2KHz) / ±(0.5% of Reading + 2 count) (50 Hz - 5KHz) / ±(0.5% of Reading + 10 count) (50 Hz - 5KHz)	
DC Process:	±(0.02% of Reading ± 1 count)			
<b>EXCITATION CURRENT</b>	25mA (Maximum)			
<b>ENVIRONMENTAL</b>	0 to 55°C			
Storage Temperature:	-10 to 60°C			
Relative Humidity:	0 to 85% non condensing @ 40°C			
Temperature Coefficient:	0.2% of input ± 0.5 digits/°C			
<b>WARM-UP TIME</b>	Less than 20 minutes			
<b>NOISE REJECTION</b>	C MRR 86dB Typical			
<b>A TO D CONVERSION</b>	Integrating Dual Slope			
Technique:	Integrating Dual Slope			
Rate:	3 samples/second typical			
<b>FREQUENCY</b>	Frequency-to-voltage			
Technique:	Frequency-to-voltage			
<b>INPUT LEVEL (Frequency Meter)</b>	500mV to 270VRMS @ 1.0Meg ohm or 5V to 24V SquareWave (DC offset = 2Vmax)		NOT AVAILABLE	
<b>MECHANICAL</b>	0.95" x 2.84" (24mm x 72mm)			
Bezel:	0.95" x 2.84" (24mm x 72mm)			
Depth:	2.36" (60mm)			
Panel cutout:	0.88" x 2.68" (22.2mm x 68mm)			
Weight:	3.5oz (99.2g)		2.6 oz (74g)	
Case Material:	94-0.UL-rated, glass-filled thermoplastic			

Mounting Requirements: see page A6

more >>

## Ordering Information

Mini-Max Indicators can be configured by making an entry in each section. Example: M245-1-0-71-0.



Selection	Description	Selection	Description
<b>Basic Unit</b>		<b>Function/Range (continued)</b>	
M235	3-1/2 Digit	31	200 mVAC TRMS
M245	4-1/2 Digit	32	2 VAC TRMS
		33	20 VAC TRMS
		34	200 VAC TRMS
		36	270 VAC TRMS**
		35	600 VAC TRMS †
<b>Display</b>		41	200 AC $\bar{A}$ TRMS
0	Non Backlit (LCD)	42	2 ACmA TRMS
1	Negative Red Backlight (LCD)	43	20 ACmA TRMS
2	Red LED	44	200 ACmA TRMS
<b>DPM Power Supply</b>		45	2 ACA TRMS
0	85-250 ACV	46	5 ACA TRMS
2	9-32 DCV* **	71	4-20 DCmA (DC Process)
<b>Function/Range</b>		72	1-5 DCV (DC Process)
11	200 DCmV	73	0-10 DCV (DC Process)
12	2 DCV	74	0-100 DCV (DC Process)
13	20 DCV	81 (M235)	20-199.9 Hz RMS**
14	200 DCV	82 (M235)	20-1999 Hz RMS**
15	600 DCV †	83 (M235)	20-199.9 Hz Sq. Wave**
21	200 DC $\mu$ A	84 (M235)	20-1999 Hz Sq. Wave**
22	2 DCmA	<b>Excitation Output (N/A w/Frequency)</b>	
23	20 DCmA	0	None
24	200 DCmA	1	12 DCV @ 25mA
25	2 DCA	2	24 DCV @ 25mA
26	5 DCA		

\* Not available on Frequency (Hz) Meters

† Not available LCD

\*\*Not available LED