

CURRENT MEASUREMENT PROBES

LM SERIES

MODELS LM102 & LM103

Equipped with high performance magnetic material offering excellent linearity and improved performance

Ideal current measurement tool for use with multimeters, data loggers and power analyzers

SPECIFICATIONS



Patent #1385787 - Mini-Clamp Design

MODELS	LM102	LM103
ELECTRICAL		
Nominal Range	200 Aac	
Measurement Range	50 mA to 200 Aac (1 Ω or 10 Ω load)	100 mA to 200 A
Transformation Ratio	1000:1	Voltage Output
Output Signal	1 mA/A (200 mAac @ 200 A)	1 mV/A (200 mVac @ 200 A)
Phase Shift	≤ 3 ° (1 Ω load) ≤ 6 ° (10 Ω load)	≤ 3 °
Overload	350 A continuous @ ≤ 1 kHz 200 A continuous @ ≤ 8 kHz	
Frequency Range	48 Hz to 10 kHz	
Load Impedance	≤ 10 Ω	≥ 10 kΩ
Open Secondary Voltage	≤ 30 V	—
Output Termination	Double-insulated 5 ft (1.5 m) lead with (2) 4 mm safety banana plugs	
MECHANICAL		
Maximum Conductor Size	Ø 0.63 in (16 mm)	
Dimensions	(5.13 x 1.81 x 1.34) in (130 x 46 x 34) mm	
Weight	Approximately 8.8 oz (250 g)	
Material	Polycarbonate UL 94	
ENVIRONMENTAL		
Operating Temperature	(14 to 122) °F (-10 to 50) °C	
Storage Temperature	(-40 to 176) °F (-40 to 80) °C	
Operating Relative Humidity	(0 to 85) % RH decreasing linearly above 95 °F (35 °C)	
SAFETY		
Safety Rating	EN 61010-1, EN 61010-2-031, EN 61010-2-032 600 V CAT III, 300 V CAT IV Pollution Degree 2	
Ingress Protection	IP20 (EN 60529)	

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LM102



FEATURES

- Clamping diameter 0.63 inch (16 mm)
- Measurement range from 0.05 Amps to 200 Amps
- Over range up to 350 Amps continuous
- 1 mA/A output (Model LM102)
- 1 mV/A output (Model LM103)
- Clothes pin design allows access to tight places
- Frequency response from 48 Hz to 10 kHz
- Arrow marker clearly assists in proper orientation for power measurement applications

CATALOG NO.	DESCRIPTION
2153.04	AC Current Probe Model LM102 (200 A/1 mA/A)
2153.05	AC Current Probe Model LM103 (200 A/1 mV/A)



CURRENT MEASUREMENT PROBES

GENERAL PURPOSE PROBES SELECTION CHART

Series	Model	Ratio	Measurement Range		Output Signal		Phase Shift**	Maximum Conductor Size		Output Connection	Catalog No.
			AC	DC	Current	Voltage		Ø Cable	Bus Bar		
	MN01	1000:1	(2 to 150) A	—	1 mA/A*	—	N/A	0.39 in (10 mm)	N/A	Leads	2129.17
	MN02	1000:1	50 mA to 100 A 50 mA to 90 A	—		—	N/A	0.39 in (10 mm)	N/A	Leads	2129.20
	MN05	—	5 mA to 10 A (1 to 100) A	—		1 mV/mA 1 mV/A	N/A	0.39 in (10 mm)	N/A	Leads	2129.19
	MN09	—	(1 to 150) A	—		100 mV _{DC} /A _{AC}	N/A	0.39 in (10 mm)	N/A	Leads	2129.21
	MN103	—	1 mA to 10 A (1 to 100) A	—		1 mV/mA 1 mV/A	N/A	0.47 in (12 mm)	N/A	Leads	1031.02
	MN114	—	1 mA to 10 A	—		100 mV/A	< 8 °	0.47 in (12 mm)	N/A	Leads	2110.71
	MN185	1000:1	50 mA to 120 A	—	1 mA/A	—	< 3.5 °	0.47 in (12 mm)	N/A	Jacks	100.185
	MN255	—	(0.1 to 24) A (0.1 to 240) A	—		100 mV/A 10 mV/A	< 2.5 °	0.78 in (20 mm)	N/A	Leads	2115.81
	MN261	—	(0.1 to 24) A (0.5 to 240) A	—		100 mV/A 10 mV/A	< 6 °	0.78 in (20 mm)	N/A	BNC	2115.82
	MN291	—	(0.5 to 240) A	—		100 mV _{DC} /A _{AC}	N/A	0.78 in (20 mm)	N/A	Leads	2115.84
	MN307	—	10 mA to 12 A	—		100 mV/A	< 2.5 °	0.78 in (20 mm)	N/A	Leads	2116.23
	MN312	1000:1	(0.1 to 200) A	—	1 mA/A*	—	< 2.5 °	0.78 in (20 mm)	N/A	Jacks	2116.24
	MN352	—	(0.1 to 150) A	—		10 mV/A	< 2.5 °	0.78 in (20 mm)	N/A	Jacks	2116.26
	MN353	—		—			< 2.5 °	0.78 in (20 mm)	N/A	Leads	2116.27
	MN373	—	(0.1 to 24) A (0.1 to 200) A	—		1000 mV/A 10 mV/A	< 3 °	0.78 in (20 mm)	N/A	Leads	2116.28
	MN375	—	(0.1 to 10) A	—		100 mV/A	< 1.5 °	0.78 in (20 mm)	N/A	Leads	2115.41
	MN379	—	5 mA to 6 A (0.1 to 120) A	—		200 mV/A 10 mV/A	< 4 °	0.78 in (20 mm)	N/A	Leads	2153.01
	MN379T	—	5 mA to 6 A (0.1 to 120) A	—		200 mV/A 10 mV/A	< 4 °	0.78 in (20 mm)	N/A	Lead w/ BNC	2153.02
	SL206	—	10 mA to 1.5 A 50 mA to 60 A	10 mA to 2 A 50 mA to 80 A	—	1 mV/mA _{AC} /DC 10 mV/A _{AC} /DC	< 1 °	0.46 in (12 mm)	N/A	Leads	1201.45
	MD301	1000:1	(2 to 500) A	—		1 mV _{DC} /A _{AC}	N/A	1.18 in (30 mm) (2 x 500) kcmil	(2.48 x 0.20) in (63 x 5) mm	Leads	1201.07

*Output Protection for open secondary

**Phase shift indicated at maximum rating

Note: Models MN103, MN106, MN114 & MN185 are not CE compliant. MN200 & MN300 series are UL approved except MN379.

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CURRENT MEASUREMENT PROBES

GENERAL PURPOSE PROBES SELECTION CHART

SERIES	MODEL	RATIO	MEASUREMENT RANGE		OUTPUT SIGNAL		PHASE SHIFT**	MAXIMUM CONDUCTOR SIZE		OUTPUT CONNECTION	CATALOG NO.
			AC	DC	CURRENT	VOLTAGE		Ø CABLE	BUS BAR		
	MR415	—	(0.5 to 400) A	(0.5 to 600) A	—	1 mV/A	≤ 1.5 °	1.18 in (30 mm)	2 bus bar (1.24 x 0.39) in (31 x 10) mm	5 ft (1.5 m) Lead	1200.80
	MR416	—	(0.5 to 40) A (0.5 to 400) A	(0.5 to 60) A (0.5 to 600) A	—	10 mV/A 1 mV/A	≤ 2.2 ° ≤ 1.5 °	1.53 in (39 mm)	2 bus bar (1.95 x 0.19) in (50 x 5) mm	5 ft (1.5 m) Lead	1200.82
	MR526	—	(0.5 to 100) A (0.5 to 1000) A	(0.5 to 150) A (0.5 to 1400) A	—	10 mV/A 1 mV/A	≤ 2 ° ≤ 1.5 °	1.53 in (39 mm)	2 bus bar (1.95 x 0.19) in (50 x 5) mm	5 ft (1.5 m) Lead	1200.83
	SR601	1000:1	(0.1 to 1200) A	—	1 mA/A*	—	< 0.5 °	2.05 in (52 mm)	(1.95 x 0.19) in (50 x 5) mm	Jacks	2113.43
	SR604	1000:1	(0.1 to 1200) A	—	1 mA/A*	—	< 0.5 °	2.05 in (52 mm)	(1.95 x 0.19) in (50 x 5) mm	Leads	2113.44
	SR651	—	(0.1 to 1200) A	—	—	1 mV/A	< 0.5 °	2.05 in (52 mm)	(1.95 x 0.19) in (50 x 5) mm	Jacks	2113.45
	SR701	1000:1	1 mA to 1000 A	—	1 mA/A*	—	< 0.7 °	2.05 in (52 mm)	(1.95 x 0.19) in (50 x 5) mm	Jacks	2116.29
	SR704	1000:1	1 mA to 1000 A	—	1 mA/A*	—	< 0.7 °	2.05 in (52 mm)	(1.95 x 0.19) in (50 x 5) mm	Leads	2116.30
	SR752	—	(0.1 to 1000) A	—	—	1 mV/A	< 0.7 °	2.05 in (52 mm)	(1.95 x 0.19) in (50 x 5) mm	Leads	2116.32
	K100	—	0.1 mA to 3 A	0.05 mA to ± 4.5 A	—	1 mV/mA	N/A	0.18 in (4.5 mm)	N/A	Plugs	1200.67
	K110	—	(0.1 to 300) mA	(0.05 to ± 450) mA	—	10 mV/mA	N/A		N/A	Plugs	2111.73
	LM102	1000:1	50 mA to 200 A	—	1 mA/A*	—	< 3 °	0.63 in (16 mm)	N/A	Leads	2153.04
	LM103	—	(0.1 to 200) A	—	—	1 mV/A	< 3 °		N/A	Leads	2153.05

*Output Protection for open secondary

**Phase shift indicated at maximum rating

Note: All SR probes listed on this chart are UL approved, however not all SR series probes are UL approved; please consult factory. Consult factory for NIST Calibration price.



OUTPUT TERMINATIONS

Lead with BNC

Insulated 6.5 ft (2 m) coaxial cable with insulated BNC connector rated 600 Vrms



Jacks

Two standard safety banana jacks (4 mm)



Leads

Double/reinforced 5 ft (1.5 m) leads with 4 mm safety banana plug



Shrouded Banana Plugs

Two 4 mm safety banana plugs; standard ¾ in (19 mm) spacing



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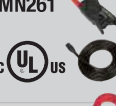
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AMPFLEX® AND MINIFLEX® PROBES - SELECTION CHARTS

SERIES	MODEL	RATIO	MEASUREMENT RANGE	OUTPUT SIGNAL	MAXIMUM CONDUCTOR SIZE	CATALOG NO.
	MF 300-10-2-10-HF	—	30 A / 300 A	100 mV/A, 10 mV/A	2.95 in (75 mm)	2126.84
	MF 3000-14-1-1-HF	—	3000 A	1 mV/A	3.93 in (100 mm)	2126.86
	MA114	—	3 A / 30 A / 300 A / 3000 A	1 mV/mA, 100 mV/A 10 mV/A, 1 mV/A	4 in (101 mm)	2153.41
	300-24-2-10	—	30 A / 300 A	100 mV/A, 10 mV/A	7.48 in (190 mm)	2112.88
	1000-24-1-1	—	1000 A	1 mV/A	7.48 in (190 mm)	2112.39
	1000-24-2-1	—	100 A / 1000 A	10 mV/A, 1 mV/A	7.48 in (190 mm)	2112.98
	1000-36-2-1	—	100 A / 1000 A	10 mV/A, 1 mV/A	11 in (280 mm)	2113.00
	3000-24-1-1	—	3000 A	1 mV/A	7.48 in (190 mm)	2112.46
	3000-36-1-1	—	3000 A	1 mV/A	11 in (280 mm)	2112.48
	3000-24-2-1	—	300 A / 3000 A	10 mV/A, 1 mV/A	7.48 in (190 mm)	2113.05
	3000-48-2-1	—	300 A / 3000 A	1 mV/A	15 in (381 mm)	2112.01
	6000-36-2-0.1	—	600 A / 6000 A	1 mV/A, 0.1 mV/A	11 in (280 mm)	2113.21
	30000-24-2-0.1	—	3000 A / 30,000 A	1 mV/A, 0.1 mV/A	7.48 in (190 mm)	2113.33
	24-3001	—	300 A / 3000 Aac	10 mV/A, 1 mV/A	7.48 in (190 mm)	2120.81

Consult factory for NIST Calibration price

OSCILLOSCOPE & BNC TERMINATED PROBES

MODEL	MEASUREMENT RANGE		OUTPUT SIGNAL VOLTAGE	PHASE SHIFT*	MAXIMUM CONDUCTOR SIZE		OUTPUT CONNECTION
	AC	DC			Ø CABLE	BUS BAR	
 SL261	100 mA to 10 A (1 to 100) A		100 mV/A 10 mV/A	< 1.5 °	0.46 in (12 mm)	N/A	6.5 ft (2 m) Lead w/BNC
 MN261	(0.1 to 24) A (0.5 to 240) A	—	100 mV/A 10 mV/A	< 2.5 °	0.78 in (20 mm)	N/A	6.5 ft (2 m) Lead w/BNC
 SR661	(0.1 to 12) A (0.1 to 120) A (1 to 1200) A	—	100 mV/A 10 mV/A 1 mV/A	< 1 °	2.05 in (52 mm)	(1.96 x 0.19) in (50 x 5) mm	6.5 ft (2 m) Lead w/BNC
 MN251T MN379T	(0.5 to 240) A	—	1 mV/A	< 2.5 °	0.78 in (20 mm)	0.78 in (20 mm)	10 ft (3 m) Lead w/BNC
	(0.005 to 6) A	—	200 mV/A	< 4 °			
	(0.1 to 120) A	—	10 mV/A	< 2.2 °			
 MH60	(0.5 to 100) A	(0.5 to 100) A	10 mV/A	< 1 °	1.02 in (26 mm)	N/A	6.6 ft (2 m) Lead w/BNC
 MR417	(0.5 to 40) A (0.5 to 400) A	(0.5 to 60) A (0.5 to 600) A	10 mV/A 1 mV/A	≤ 2.2 ° ≤ 1.5 °	1.18 in (30 mm)	2 bus bar (1.24 x 0.39) in (32 x 10) mm	6.6 ft (2 m) Lead w/BNC
 MR527	(0.5 to 100) A (0.5 to 1000) A	(0.5 to 150) A (0.5 to 1400) A	10 mV/A 1 mV/A	≤ 2.2 ° ≤ 1.5 °	1.53 in (39 mm)	2 bus bar (1.96 x 0.19) in (50 x 5) mm	6.6 ft (2 m) Lead w/BNC

*Phase shift indicated at maximum rating. Note: All probes are rated 600 V CAT III and CE compliant. Not all models are UL approved; please consult factory. Consult factory for NIST Calibration price.

