MN SERIES

Compact sized probes ideal for measuring low currents and leakage currents

Standard millivolt or milliamp outputs are compatible with multimeters, data loggers and oscilloscopes

MN103

MN185

SPECIFICATIONS

Patent #1385787 - Mini-Clamp Design

MODELS	MN103	MN114	MN185
ELECTRICAL			
Nominal Range	10 AAC, 100 AAC	10 AAC	120 AAC
Measurement Range	1 mA to 10 AAC (1 to 100) AAC	1 mA to 10 AAC	50 mA to 120 AAC
Transformation Ratio	Voltage output	Voltage output	1000:1
Output Signal	1 mV/mA, 1 mV/A (10 VAC @ 10 A, 100 mVAC @ 100 A)	100 mV/A (1 VAC @ 10 A)	1 mA/A (120 mAAC @ 120 A)
Phase Shift	–	(10 to 100) A, (45 to 65) Hz: 8 °	(1 to 100) A, (50 to 60) Hz: ≤ 3.5 °
Overload	–	20 A continuous	170 A continuous
Frequency Range	(45 to 500) Hz	(30 to 5) kHz	(30 to 10) kHz
Load Impedance	≥ 100 kΩ	≥ 100 kΩ	≤ 5 Ω non-inductive
Working/Common Mode Voltage	250 VAC/250 VAC		250 VAC/30 VAC
Output Termination	5 ft (1.5 m) lead with 4 mm safety banana plugs		(2) 4 mm banana jacks
MECHANICAL			
Jaw Opening	0.78 in (20 mm)		
Maximum Conductor Size	0.47 in Ø max (12 mm)		
Dimensions	(1.26 x 4.53 x 0.87) in (32 x 115 x 22) mm		
Weight	5.6 oz (159 g)		
Material	Polycarbonate UL 94		
ENVIRONMENTAL			
Operating Temperature	(14 to 122) °F (-10 to 50) °C	(-13 to 122) °F (-25 to 50) 0 °C	
Storage Temperature	(-40 to 176) °F (-40 to 80) °C		
SAFETY			
Safety Rating	3 kV (50/60) Hz dielectric for 1 min Probes MN 103/114 and 185 are not CE marked		

Consult factory for NIST Calibration prices

FEATURES

- Measurement range of 1 mA to 120 AAC
- Jaw opening of 0.78 inch
- Accommodates conductors up to 0.47 inch diameter
- Ergonomic design and easy operation
- Compact size accommodates hard to reach locations
- Low phase shift for power measurements
- Available with mV or mA output signals
- Constructed with UL94VO flame retardant material
- Designed for DMMs, recorders, loggers and oscilloscopes

CATALOG NO.	DESCRIPTION
1031.02	AC Current Probe Model MN103 (10 A, 1 mV/mA & 100 A, 1 mV/A, Lead)
2110.71	AC Current Probe Model MN114 (10 A, 100 mV/A, Lead)
100.185	AC Current Probe Model MN185 (100 A, 1 mA/A, Jack)

CURRENT MEASUREMENT PROBES

GENERAL PURPOSE PROBES SELECTION CHART

Series	Model	Ratio	Measurement Range		Output Signal		Phase Shift**	Maximum Conductor Size		Output Connec-tion	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 mVDC/AAC	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 mVDC/AAC	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	–	(0.01 to 2.4) 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/mAAC/DC 10 mV/AAC/DC	< 1 °	0.46 in (12 mm)	N/A	Leads	1201.45
	**MD301**	1000:1	(2 to 500) A	–		1 mVDC/AAC	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.
Consult factory for NIST Calibration price.

CURRENT MEASUREMENT PROBES

GENERAL PURPOSE PROBES SELECTION CHART

SERIES	MODEL	RATIO	MEASUREMENT RANGE		OUTPUT SIGNAL		PHASE SHIFT**	MAXIMUM CONDUCTOR SIZE		OUTPUT CONNEC-TION	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
	SR759	–	1 mA to 1 A 10 mA to 10 A (0.1 to 100) A (1 to 1000) A	–	–	1000 mV/A 100 mV/A 10 mV/A 1 mV/A	< 1 °	2.05 in (52 mm)	(1.95 x 0.19) in (50 x 5) mm	Leads	2116.33
	**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

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	PHASE SHIFT*	MAXIMUM CONDUCTOR SIZE		OUTPUT CONNECTION
	AC	DC	VOLTAGE		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.