

CURRENT MEASUREMENT PROBES

MN SERIES AC CURRENT PROBES



MN300 SERIES

Compact sized probes ideal for measuring low currents and leakage currents

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



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MN307

MODELS	MN307	MN312	MN352	MN353	MN375	MN379*
ELECTRICAL						
Nominal Range	10 A _{AC}	150 A _{AC}			10 A _{AC}	5 A _{AC} ; 100 A _{AC}
Measurement Range	(0.1 to 12) A _{AC}	(0.1 to 200) A _{AC}			(0.1 to 10) A _{AC}	5 mA to 6 A _{AC} ; (0.1 to 120) A _{AC}
Transformation Ratio	Voltage output	1000:1	Voltage output			
Output Signal	100 mV/A (1 V _{AC} @ 10 A)	1 mA/A (150 mA _{AC} @ 150 A)	10 mV/A (1.5 V _{AC} @ 150 A)		100 mV/A (1 V _{AC} @ 10 A)	5 A: 200 mV/A (1 V _{AC} @ 5 A) 100 A: 10 mV/A (1 V _{AC} @ 100 A) (5 A Range) 5 mA: 6.5 ° 50 mA: 5 ° 0.5 A: 4.5 ° 5 A: 4 ° (100 A Range) 0.1 A: 3.2 ° (1; 10; 100) A: 2.2 °
Phase Shift	(0.1 to 1) A: ≤ 5 ° (1 to 5) A: ≤ 3 ° (5 to 12) A: ≤ 2.5 °	(0.1 to 1) A: Not specified (1 to 20) A: ≤ 3 ° (20 to 80) A: ≤ 2 ° (80 to 150) A: ≤ 2.5 ° (150 to 200) A: Not specified			(1 to 5) A: ≤ 1 ° @ 60 Hz (5 to 10) A: ≤ 1.5 ° @ 60 Hz	
Overload	20 A Continuous	200 A Continuous	240 A for 10 min ON, 30 min OFF		20 A Continuous	200 A Continuous
Frequency Range	40 Hz to 10 kHz				40 Hz to 3 kHz	40 Hz to 10 kHz
Load Impedance	1 MΩ	1 Ω	1 MΩ			
Crest Factor	3 @ 10 Arms with an error (due to CF) of 3 %	3 @ 200 A peak with an error (due to CF) of 3 %	3 @ 150 A peak with an error (due to CF) of 3 %		3 @ 10 Arms with an error (due to CF) of 3 %	Not specified
Working / Common Mode Voltage	600 Vrms					
Output Termination	Double-insulated 5 ft (1.5 m) lead with (2) 4 mm safety banana plugs	(2) standard safety 4 mm banana jacks		Double-insulated 5 ft (1.5 m) lead with (2) 4 mm safety banana plugs		
MECHANICAL / ENVIRONMENTAL						
Jaw Opening	0.83 in (21 mm)					
Maximum Conductor Size	0.78 in max (20 mm)					
Dimensions	(5.47 x 2.00 x 1.18) in (139 x 51 x 30) mm					
Weight	6.5 oz (180 g)					
Material	Polycarbonate UL 94					
Operating Temperature	(14 to 131) °F (-10 to 55) °C					
Storage Temperature	(-40 to 158) °F (-40 to 70) °C					
Operating Relative Humidity	85 % RH without roll-off above 95 °F (95 °C)					
SAFETY						
Safety Rating	EN / IEC 61010-1 600 V CAT III, EN 61010-2-32, Pollution Degree 2					
UL Approval	Yes - United States and Canada *(excludes MN379)					

Consult factory for NIST Calibration prices.

CAT. #	DESCRIPTION	CAT. #	DESCRIPTION
2116.23	AC Current Probe Model MN307 (12 A, 100 mV/A, Lead)	2116.27	AC Current Probe Model MN353 (150 A, 10 mV/A, Lead)
2116.24	AC Current Probe Model MN312 (150 A, 1 mA/A, Jack)	2115.41	AC Current Probe Model MN375 (10 A, 100 mV/A, Lead)
2116.26	AC Current Probe Model MN352 (150 A, 10 mV/A, Jack)	2153.01	AC Current Probe Model MN379 (5 A, 200 mV/A & 100 A, 10 mV/A, Lead)



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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	CAT. #
			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	—	1 mA/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
	MN134	—	1 mA to 10 A	—		100 mV _{AC} / A _{AC}	< 10°	0.39 in (10 mm)	N / A	Leads	2129.22
	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	—	(0.1 to 150) A	—		10 mV/A	< 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/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
	MD305	1000:1	(1 to 600) A	—	1 mA/A	—	< 1 °	1.18 in (30 mm) (2 x 500) kcmil	(2.48 x 0.20) in (63 x 5) mm	Leads	1201.36

*Output protection for open secondary.

**Phase shift indicated at maximum rating.

Note: Model 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 CONNECTION	CAT. #
			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	0.18 in (4.5 mm)	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 °	0.63 in (16 mm)	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



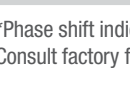
CURRENT MEASUREMENT PROBES

AMPFLEX® AND MINIFLEX® PROBES - SELECTION CHARTS

SERIES	MODEL	RATIO	MEASUREMENT RANGE	OUTPUT SIGNAL	MAXIMUM CONDUCTOR SIZE	CAT. #
	MF 300-10-2-10-HF	—	(30 / 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 / 30 / 300 / 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 / 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 / 1000) A	10 mV/A, 1 mV/A	7.48 in (190 mm)	2112.98
	1000-36-2-1	—	(100 / 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 / 3000) A	10 mV/A, 1 mV/A	7.48 in (190 mm)	2113.05
	3000-48-2-1	—	(300 / 3000) A	10 mV/A, 1 mV/A	15 in (381 mm)	2112.01
	6000-36-2-0.1	—	(600 / 6000) A	1 mV/A, 0.1 mV/A	11 in (280 mm)	2113.21
	30000-24-2-0.1	—	(3000 / 30,000) A	1 mV/A, 0.1 mV/A	7.48 in (190 mm)	2113.33
	24-3001	—	300 A / 3000 A _{AC}	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			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 x 0.19) in (20 x 5) mm	10 ft (3 m) Lead w / BNC
	(0.005 to 6) A (0.1 to 120) A	—	200 mV/A 10 mV/A	≤ 4 ° ≤ 2.2 °	0.78 in (20 mm)	(0.78 x 0.19) in (20 x 5) mm	10 ft (3 m) Lead w / BNC
 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.
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