

# CURRENT MEASUREMENT PROBES

## MINIFLEX® SERIES

### HIGH FREQUENCY OSCILLOSCOPE COMPATIBLE MINIFLEX® PROBES

*A compact AC current measurement device composed of a flexible sensor, a BNC connector, and an electronic module designed to measure frequency response up to 1MHz*



MF 300-6-2-10-HF (6" PROBE)



MF 300-10-2-10-HF (10" PROBE)



MF 3000-14-2-10-HF (14" PROBE)

## SPECIFICATIONS

MODELS	MF 300-6-2-10-HF	MF 300-10-2-10-HF	MF 3000-14-1-1-HF
<b>ELECTRICAL</b>			
Current Range	30/300A		3000A
Measurement Range	0.5 to 300A		0.5 to 3000A
Accuracy	1% ± 300mA		
Signal Output	100mV / 10mV/A		1mV/A
Frequency Range	2 to 1MHz @ -3db		
Influence of Conductor Positioning	1% typical, 2% max		
Influence of Conductor Positioning in Sensor Against Handle	1% typical, 6% max		
External Conductor Influence	30.5db to 40db on contact		
Power Source	9V Alkaline battery (6 LF22)		
<b>MECHANICAL</b>			
Sensor Diameter	Ø 0.2" (5mm)		
Sensor Length	6" (152mm)	10" (250mm)	14" (350mm)
Max Conductor Size	1.77" (45mm)	2.75" (70mm)	3.93" (100mm)
Connection Cable Length	6.5 ft (2m)		15.75" (40 cm)
Drop Test	Per IEC 68-2-32		
Vibration	Per IEC 68-2-6		
Mechanical Shock	Per IEC 68-2-27		
Weatherproofing	IP50		
<b>ENVIRONMENTAL</b>			
Operating Temperature Range	14° to 131°F (-10° to +55°C)		
Storage Temperature Range	-40° to 158°F (-40° to +70°C)		
Altitude	Operating: 0 to 6562 ft (0 to 2000m), working voltage derating above; Non-operating: 0 to 39,000 ft (0 to 12,000m)		
<b>SAFETY</b>			
Safety Rating	Housing: EN 61010 600V CAT III, 300V CAT IV Sensor: EN 61010 1000V CAT III, 600V CAT IV		








## FEATURES

- Measures from 0.5 to 300Arms
- Accuracy ±1% of Reading ±0.2A
- TRMS measurements when connected to a TRMS instrument
- No core saturation or damage if overloaded
- 9V battery for typical 150 hours continuous operation
- 1MHz frequency response
- Low phase shift for power measurements
- Insensitive to DC, measures only AC component on AC + DC signals
- Excellent linearity
- Lightweight
- Sensor is resistant to oils and aliphatic hydrocarbons
- Perfect accessory for any BNC oscilloscopes

CATALOG NO.	DESCRIPTION
2126.83	MiniFlex® 30/300A, 6", 100mV/10mV/A High Frequency (for any BNC Oscilloscope)
2126.84	MiniFlex® 30/300A, 10", 100mV/10mV/A High Frequency (for any BNC Oscilloscope)
2126.86	MiniFlex® 300A, 14", 1mV/A High Frequency (for any BNC Oscilloscope)

# 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 150A	-	1mA/A*	-	N/A	0.39" (10mm)	-	Leads	2129.17				
	MN02		50mA to 100A 50mA to 90A			-					2129.20				
	MN03	2 to 100A	-		1mV/A	2129.18									
	MN05	-	5mA to 10A 1 to 100A		-	1mV/A 1mV/A					2129.19				
	MN103	-	1mA to 10A 1 to 100A		-	1mV/A 1mV/A					1031.02				
	MN106	1000:1	2 to 150A	1mA/A	-	<10°	0.47" (12mm)	-	-	1031.17					
	MN114	-	1mA to 10A	-	100mV/A	<8°				2110.71					
	MN185	1000:1	50mA to 120A	1mA/A	-	<3.5°				Jacks	100.185				
	MN213		1mA/A*	-	<2.5°	Leads				2115.75					
	MN251	-	0.5 to 240A	-	1mV/A	<2.5°				Leads	2115.77				
MN253	-			10mV/A	2115.79										
	MN255	-	0.1 to 24A 0.1 to 240A	-	100mV/A 10mV/A	N/A	N/A	-	-	2115.81					
	MN291	-	0.5 to 240A	-	100mVdc/Aac	N/A				2115.84					
	MN307	-	10mA to 12A	-	100mV/A	<2.5°				2116.23					
	MN312	1000:1	0.1 to 200A	1mA/A*	-	<2.5°				Jacks	2116.24				
	MN313			-	Leads	2116.25									
	MN352	-	0.1 to 150A	-	10mV/A	<3°				Jacks	2116.26				
	MN353			-	2116.27										
	MN373	-	0.01 to 2.4A 0.1 to 200A	-	1000mV/A 10mV/A	<3°				Leads	2116.28				
	MN375			0.1 to 10A	-	100mV/A				<1.5°	2115.41				
	MN379			5mA to 6A 0.1 to 120A	-	200mV/A 10mV/A				2153.01					
		SL206	-	10mA to 1.5A 50mA to 60A	10mA to 2A 50mA to 80A	-				1mV/mAac/dc 10mV/Aac/dc	<1°	0.46" (11.8mm)	-	Leads	1201.45
		MD301	1000:1	2 to 500A	-	-				1mVdc/Aac	N/A	1.18" (30mm) 2 x 500kcmil	2.48 x 0.20" (63 x 5mm)	-	1201.07
		MD305		1 to 600A	1mA/A*	-				<1°	1201.36				

\*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 CONNECTION	CATALOG NO.
			AC	DC	CURRENT	VOLTAGE		Ø CABLE	BUS BAR		
	MR415	-	0.5 to 400A	0.5 to 600A	-	1mV/A	≤1.5°	1.18" (30mm)	2 bus bar 1.24 x 0.39" (31.5 x 10mm)	5 ft (1.5m) Lead	1200.80
	MR416		0.5 to 40A 0.5 to 400A	0.5 to 60A 0.5 to 600A		10mV/A 1mV/A	≤2.2° ≤1.5°				1200.82
	MR525		0.5 to 1000A	0.5 to 1400A		1mV/A	≤1.5°	1200.81			
	MR526		0.5 to 100A 0.5 to 1000A	0.5 to 150A 0.5 to 1400A		10mV/A 1mV/A	≤2° ≤1.5°	1.53" (39mm)	2 bus bar 1.96 x 0.19" (50 x 5mm)		1200.83
	SR600	1000:1	0.1 to 1000A	-	1mA/A	-	<0.5°	2.05" (52mm)	1.96 x 0.19" (50 x 5mm)	Jacks	2113.42
	SR601				1mA/A*					2113.43	
	SR604				1mA/A*					Leads	2113.44
	SR634	250:5 500:5 1000:5	1 to 250A 1 to 500A 1 to 1000A	20mA/A 10mA/A 5mA/A*	<1°	Jacks	2113.48				
	SR651	-	0.1 to 1000A	-	1mV/A	<0.5°	Jacks			2113.45	
	SR701	1000:1	1mA to 1000A	-	1mA/A*	-	<0.7°			2116.29	
	SR704									2116.30	
	SR752	-	0.1 to 1000A	-	1mV/A	-	Leads			2116.32	
	SR759	-	1mA to 1A 10mA to 10A 0.1 to 100A 1 to 1000A	-	1000mV/A 100mV/A 10mV/A 1mV/A	<1°	2116.33				
	K100	-	0.1mA to 3A	0.05mA to ±4A	-	1mV/mA	N/A	0.18" (4.5 mm)	N/A	Plugs	1200.67
	K110		0.1mA to 300mA	0.05mA to ±450mA	10mV/mA	2111.73					
	LM102	1000:1	50mA to 200A	-	1mA/A*	-	<3°	0.63" (16 mm)	-	Leads	2153.04
	LM103	-	0.1 to 200A	-	-	1mV/A				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 (2m) coaxial cable with insulated BNC connector rated 600Vrms



### Jacks

Two standard safety banana jacks (4mm)



### Leads

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







### Shrouded Banana Plugs

Two 4mm safety banana plugs; standard 3/4" (19mm) spacing










# AMPFLEX® AND MINIFLEX® PROBES - SELECTION CHARTS

SERIES	MODEL	RATIO	MEASUREMENT RANGE	OUTPUT SIGNAL	MAXIMUM CONDUCTOR SIZE	CATALOG NO.
	MF 300-6-2-10-HF	—	30A / 300A	100mV/A, 10mV/A	1.77" (45mm)	2126.83
	MF 300-10-2-10-HF	—			2.95" (70mm)	2126.84
	MA114	—	3A / 30A / 300A / 3000A	1mV/mA, 100mV/A 10mV/A, 1mV/A	4" (101mm)	2153.41
	300-24-2-10	—	30A / 300A	100mV/A, 10mV/A	7.48" (190mm)	2112.88
	1000-24-1-1	—	1000A	1mV/A		2112.39
	1000-24-2-1	—	100A / 1000A	10mV/A, 1mV/A	11" (290mm)	2112.98
	1000-36-2-1	—			11" (290mm)	2113.00
	3000-24-1-1	—	3000A	1mV/A	7.48" (190mm)	2112.46
	3000-36-1-1	—			11" (290mm)	2112.48
	3000-24-2-1	—	300A / 3000A	10mV/A, 1mV/A	7.48" (190mm)	2113.05
	3000-36-2-1	—			11" (290mm)	2112.00
	3000-48-2-1	—			15" (390mm)	2112.01
	6000-36-2-0.1	—	600A / 6000A	1mV/A, 0.1mV/A	11" (290mm)	2113.21
30000-24-2-0.1	—	3000A / 30,000A	2113.33			
	24-3001	—	300A / 3000AAC	10mV/A, 1mV/A	7.48" (190mm)	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	100mA to 10A 1 to 100A		100mV/A 10mV/A	<1.5°	0.46" (11.8mm)	N/A	6.6 ft (2m) Lead w/BNC
 MN261	0.1 to 24A 0.5 to 240A	—		<2.5°	0.78" (19.8mm)		
 SR661	0.1 to 12A 0.1 to 120A 1 to 1200A		<1°	2.05" (52mm)	1.96 x 0.19" (50 x 5mm)		
 MN251T MN379T	0.5 to 240A		1mV/A	<2.5°	0.78" (20mm)	0.78" (20mm)	10 ft (3m) Lead w/BNC
	0.005 to 6A	200mV/A	<4°				
	0.1 to 120A	10mV/A	<2.2°				
 MH60	0.5 to 100A	0.5 to 100A	10mV/A	<1°	1.02" (26mm)	N/A	6.6 ft (2m) Lead w/BNC
 MR417	0.5 to 40A 0.5 to 400A	0.5 to 60A 0.5 to 600A	10mV/A 1mV/A	≤2.2° ≤1.5°	1.18" (30mm)	2 bus bar 1.24 x 0.39" (31.5 x 10mm)	
 MR527	0.5 to 100A 0.5 to 1000A	0.5 to 150A 0.5 to 1400A		≤2.2° ≤1.5°	1.53" (39mm)	2 bus bar 1.96 x 0.19" (50 x 5mm)	

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