

SPECIFICATIONS: TRANSVERSE PROBES

1.0 GENERAL DESCRIPTION

6000 SERIES TRANSVERSE PROBES ARE PRECISION, SOLID STATE MAGNETIC FIELD SENSORS DESIGNED FOR USE WITH F.W. BELL 6000 SERIES GAUSSMETERS TO PROVIDE STABLE AND REPEATABLE TRANSVERSE MAGNETIC FLUX DENSITY MEASUREMENTS. THESE UNITS FEATURE RUGGEDIZED CONSTRUCTION SUITABLE FOR MANUAL OR FIXTURED APPLICATIONS.

2.0 ELECTRICAL AND PHYSICAL SPECIFICATIONS

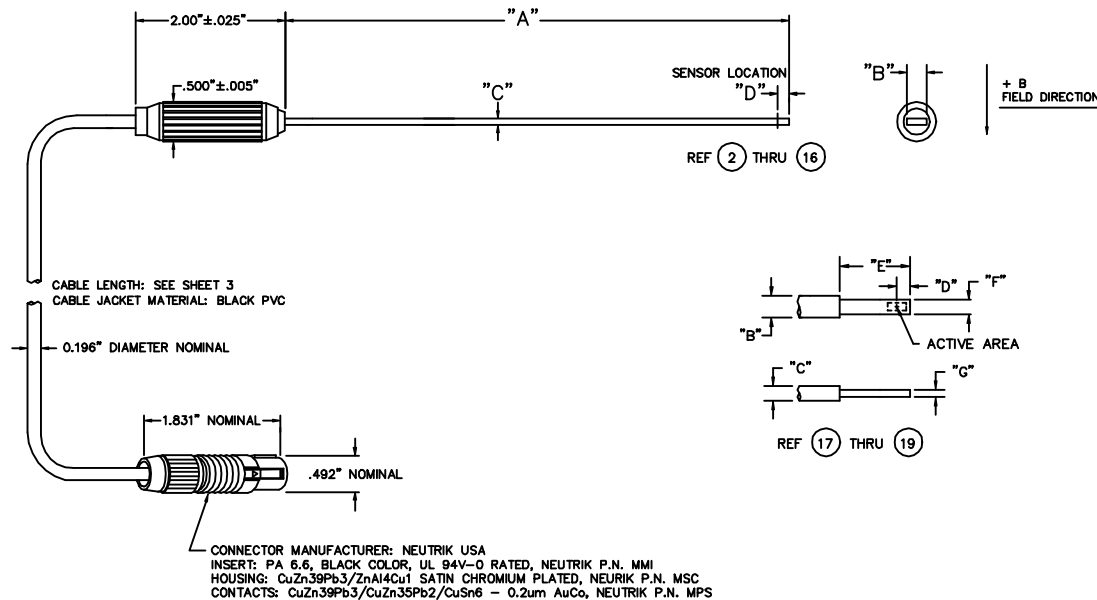
- 2.1 FOR SPECIFICATION DETAILS REFER TO TABLE 1 ON PAGE 3.
- 2.2 ELECTRICAL SCHEMATIC : REF ①
- 2.3 OPERATING TEMPERATURE RANGE : 0°C TO +75°C (+32°F TO +167°F)
- 2.4 STORAGE TEMPERATURE RANGE : -25°C TO +75°C (-13°F TO +167°F)

3.0 CALIBRATION

- 3.1 CALIBRATION IS REFERENCED TO A LABORATORY STANDARD MAGNET. THIS STANDARD IS MEASURED BY THE NUCLEAR MAGNETIC RESONANCE (NMR) TECHNIQUE, WHICH IS BASED ON ACCEPTED VALUES OF NATURAL PHYSICAL CONSTANTS
- 3.2 PROBES ARE CALIBRATED TO INDICATED ACCURACY OVER THE SPECIFIED RANGES WHEN USED WITH THE APPROPRIATE F.W. BELL GAUSSMETER.
- 3.3 GAUSSMETER ERRORS MUST BE ADDED TO PROBE LINEARITY ERRORS TO OBTAIN OVERALL MEASURING ACCURACY.

4.0 SPECIAL PROBES

- 4.1 ELECTRICAL AND/OR PHYSICAL REQUIREMENTS NOT COVERED BY STANDARD PROBES MAY BE FURNISHED AS SPECIAL PROBES.



40			
39			
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34			
33	REF	126878	AXIAL PROBE, MODEL SAR61-1802-30
32	REF	126877	AXIAL PROBE, MODEL SAR61-1802-15
31	REF	126876	AXIAL PROBE, MODEL SAR61-1802-05
30	REF	126875	AXIAL PROBE, MODEL HAD61-2508-30
29	REF	126874	AXIAL PROBE, MODEL HAD61-2508-15
28	REF	126873	AXIAL PROBE, MODEL HAD61-2508-05
27	REF	126872	AXIAL PROBE, MODEL HAD61-2508-30-T
26	REF	126871	AXIAL PROBE, MODEL HAD61-2508-15-T
25	REF	126870	AXIAL PROBE, MODEL HAD61-2508-05-T
24			
23			
22			
21			
20			
19	REF	126868	TRANSVERSE PROBE, MODEL STD61-0204-30
18	REF	126867	TRANSVERSE PROBE, MODEL STD61-0204-15
17	REF	126866	TRANSVERSE PROBE, MODEL STD61-0204-05
16	REF	126865	TRANSVERSE PROBE, MODEL STD61-0402-30
15	REF	126864	TRANSVERSE PROBE, MODEL STD61-0402-15
14	REF	126863	TRANSVERSE PROBE, MODEL STD61-0402-05
13	REF	126862	TRANSVERSE PROBE, MODEL STD61-0404-30
12	REF	126861	TRANSVERSE PROBE, MODEL STD61-0404-15
11	REF	126860	TRANSVERSE PROBE, MODEL STD61-0404-05
10	REF	126858	TRANSVERSE PROBE, MODEL HTR61-0608-30
9	REF	126857	TRANSVERSE PROBE, MODEL HTR61-0608-15
8	REF	126856	TRANSVERSE PROBE, MODEL HTR61-0608-05
7	REF	126855	TRANSVERSE PROBE, MODEL HTD61-0608-30
6	REF	126854	TRANSVERSE PROBE, MODEL HTD61-0608-15
5	REF	126853	TRANSVERSE PROBE, MODEL HTD61-0608-05
4	REF	126852	TRANSVERSE PROBE, MODEL HTD61-0608-30-T
3	REF	126851	TRANSVERSE PROBE, MODEL HTD61-0608-15-T
2	REF	126850	TRANSVERSE PROBE, MODEL HTD61-0608-05-T
1	REF		

FIGURE 1. TRANSVERSE PROBES (REF. ② THRU ⑱)

REV. STATUS OF SHEETS	REV.	1	2	3	4	5	6	7	8	9	10
	SHEET										

REF	QTY	DWG / ITEM NO.	DESCRIPTION
UNLESS OTHERWISE SPECIFIED:		MATERIAL & FINISH	
DIMENSIONS IN INCHES (DO NOT SCALE TO DWG)		AS NOTED	
SCALE: NONE	DRN: 09-18-98 JTM	<div style="text-align: center; font-weight: bold; font-size: 1.2em;">FW. BELL</div> TITLE: SPECIFICATIONS, 6000 SERIES GAUSSMETER PROBES	
DEC: AS NOTED	APPD: 10-02-98 MS		
FRAC: _____	GA: APPD: 10-02-98 RMB		
ANG: _____	REL: 10-02-98 JTM		
SHT 1 OF 3			DWG NO. UC-5849

SPECIFICATIONS: AXIAL PROBES

1.0 GENERAL DESCRIPTION

6000 SERIES AXIAL PROBES ARE PRECISION, SOLID STATE MAGNETIC FIELD SENSORS DESIGNED FOR USE WITH F.W. BELL 6000 SERIES GAUSSMETERS TO PROVIDE STABLE AND REPEATABLE AXIAL MAGNETIC FLUX DENSITY MEASUREMENTS. THESE UNITS FEATURE RUGGEDIZED CONSTRUCTION SUITABLE FOR MANUAL OR FIXTURED APPLICATIONS.

2.0 ELECTRICAL AND PHYSICAL SPECIFICATIONS

- 2.1 FOR SPECIFICATION DETAILS REFER TO TABLE 2 ON PAGE 3.
- 2.2 ELECTRICAL SCHEMATIC : REF ①
- 2.3 OPERATING TEMPERATURE RANGE : 0°C TO +75°C (+32°F TO +167°F)
- 2.4 STORAGE TEMPERATURE RANGE : -25°C TO +75°C (-13°F TO +167°F)

3.0 CALIBRATION

- 3.1 CALIBRATION IS REFERENCED TO A LABORATORY STANDARD MAGNET. THIS STANDARD IS MEASURED BY THE NUCLEAR MAGNETIC RESONANCE (NMR) TECHNIQUE, WHICH IS BASED ON ACCEPTED VALUES OF NATURAL PHYSICAL CONSTANTS.
- 3.2 PROBES ARE CALIBRATED TO INDICATED ACCURACY OVER THE SPECIFIED RANGES WHEN USED WITH THE APPROPRIATE F.W. BELL GAUSSMETER.
- 3.3 GAUSSMETER ERRORS MUST BE ADDED TO PROBE LINEARITY ERRORS TO OBTAIN OVERALL MEASURING ACCURACY.

4.0 SPECIAL PROBES

- 4.1 ELECTRICAL AND/OR PHYSICAL REQUIREMENTS NOT COVERED BY STANDARD PROBES MAY BE FURNISHED AS SPECIAL PROBES.

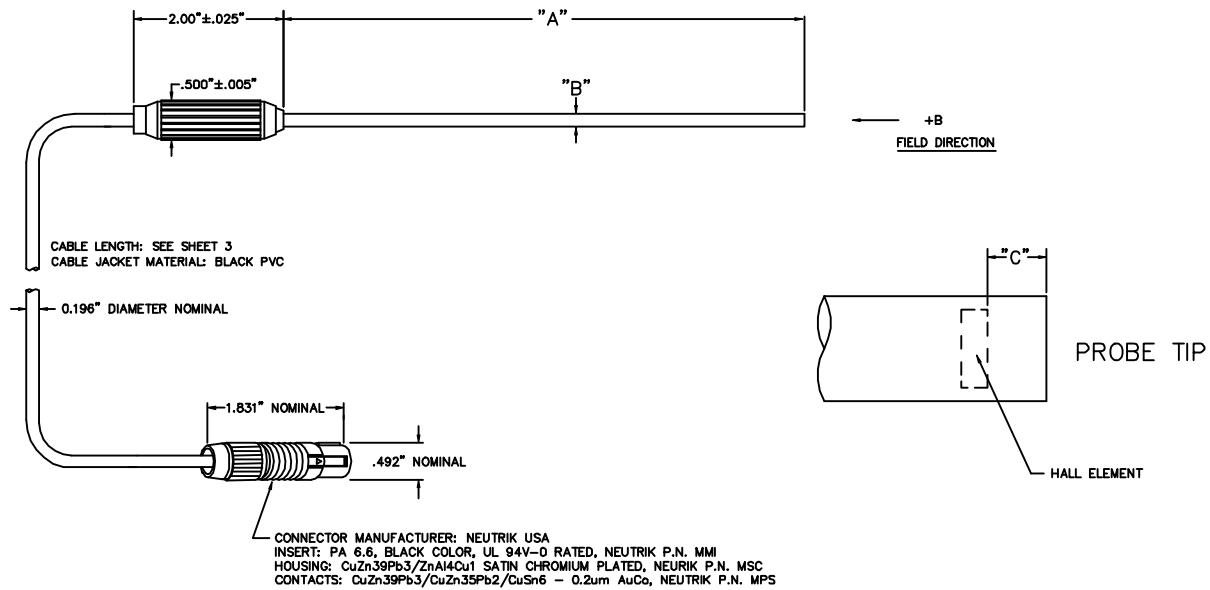


FIGURE 2. AXIAL PROBES (REF. ②5 THRU ③3)

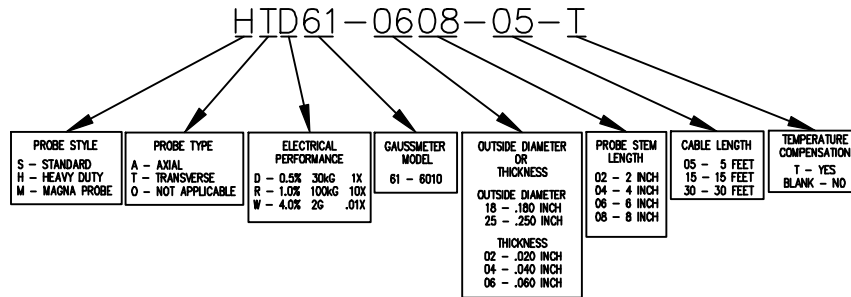


TABLE 1. ELECTRICAL SPECIFICATIONS FOR TRANSVERSE PROBES

REF	MODEL NO.	"A" ±.063"	"B"	"C"	"D"	MATERIAL	CORRECTED LINEARITY	SENS	ACTIVE AREA	OP. TEMP RANGE	TEMP. STABILITY		HALL DEVICE TYPE	FREQ. RESP.	TEMPERATURE COMPENSATED	CABLE LENGTH											
											ZERO	CAL															
2	HTD61-0608-05-T	8"	0.180" ±.003"	0.060" +.000" -.004"	0.150" ±0.020"	ALUMINUM 3003 3/4 FH	0.5%/30KG	1X	0.070" DIA. (NOM)	0°C TO +75°C	±0.300 GAUSS PER °C (TYP)	-0.05% PER °C (TYP)	JB-3913-01	DC TO 20 KHz	YES	5 FEET											
3	HTD61-0608-15-T															15 FEET											
4	HTD61-0608-30-T															30 FEET											
5	HTD61-0608-05															5 FEET											
6	HTD61-0608-15															15 FEET											
7	HTD61-0608-30															30 FEET											
8	HTR61-0608-05												4"	0.150" ±.004"	0.040" +.000" -.004"	0.150" ±0.020"	G 10 RIGID GLASS EPOXY	0.5%/30KG	1X	0.070" DIA. (NOM)	0°C TO +75°C	±0.300 GAUSS PER °C (TYP)	-0.05% PER °C (TYP)	JB-3913-02	DC TO 20 KHz	NO	5 FEET
9	HTR61-0608-15																										15 FEET
10	HTR61-0608-30																										30 FEET
11	STD61-0404-05																										5 FEET
12	STD61-0404-15	15 FEET																									
13	STD61-0404-30	30 FEET																									
14	STD61-0402-05	2"	0.150" ±.004"	0.040" +.000" -.004"	0.150" ±0.020"	G 10 RIGID GLASS EPOXY	0.5%/30KG	1X	0.070" DIA. (NOM)	0°C TO +75°C	±0.300 GAUSS PER °C (TYP)	-0.05% PER °C (TYP)												YD-2381-014	DC	NO	5 FEET
15	STD61-0402-15																										15 FEET
16	STD61-0402-30																										30 FEET
16	STD61-0402-30																										30 FEET

REF	MODEL NO.	"A" ±.063"	"B"	"C"	"D"	"E"	"F"	"G"	MATERIAL	CORRECTED LINEARITY	SENS	ACTIVE AREA	OP. TEMP RANGE	TEMP. STABILITY		HALL DEVICE TYPE	FREQ. RESP.	TEMPERATURE COMPENSATED	CABLE LENGTH
														ZERO	CAL				
17	STD61-0204-05	4"	0.155" ±.005"	0.040" +.002" -.009"	0.130" ±0.008"	0.375" ±0.063"	0.130" ±0.003"	0.020" ±0.003"	FLEXIBLE RUBBER	0.5%/30KG	1X	0.070" DIA. (NOM)	0°C TO +75°C	±0.300 GAUSS PER °C (TYP)	-0.05% PER °C (TYP)	YD-2381-012	DC TO 20 KHz	NO	5 FEET
18	STD61-0204-15																		15 FEET
19	STD61-0204-30																		30 FEET

TABLE 2. ELECTRICAL SPECIFICATIONS FOR AXIAL PROBES

REF	MODEL NO.	"A" ±.063"	"B"	"C"	MATERIAL	CORRECTED LINEARITY	SENS	ACTIVE AREA	OP. TEMP RANGE	TEMP. STABILITY		HALL DEVICE TYPE	FREQ. RESP.	TEMPERATURE COMPENSATED	CABLE LENGTH
										ZERO	CAL				
25	HAD61-2508-05-T	8"	0.250" ±.005"	0.015" ±.010"	ALUMINUM 3003 3/4 FH	0.5%/30KG	1X	0.030" DIA. (NOM)	0°C TO +75°C	±0.300 GAUSS PER °C (TYP)	-0.05% PER °C (TYP)	JB-3913-02	DC TO 20 KHz	YES	5 FEET
26	HAD61-2508-15-T														15 FEET
27	HAD61-2508-30-T														30 FEET
28	HAD61-2508-05														5 FEET
29	HAD61-2508-15														15 FEET
30	HAD61-2508-30														30 FEET
31	SAR61-1802-05	2"	0.180" +.002" -.004"	0.150" ±0.020"	RIGID PHENOLIC	1.0%/100KG	10X	0.070" DIA. (NOM)	0°C TO +75°C	±0.300 GAUSS PER °C (TYP)	-0.05% PER °C (TYP)	YD-2384-024	DC	NO	5 FEET
32	SAR61-1802-15														15 FEET
33	SAR61-1802-30														30 FEET
33	SAR61-1802-30														30 FEET

SPECIFICATIONS

LTR	ECO	RELEASE DATE	BY
A	12485	10-09-01	JTM

GENERAL DESCRIPTION

1.0 THE MOW61-2506 MAGNA PROBE IS A HIGH SENSITIVITY, FLUX MAGNIFIER TYPE OF FIELD SENSOR USEFUL FOR INDICATION, MEASUREMENT AND ANALYSIS OF WEAK MAGNETIC FIELDS WHEN UTILIZED WITH THE APPROPRIATE F.W. BELL, INC GAUSSMETER. BOTH STATIC D.C. AND TIME-VARYING FIELDS CAN BE MEASURED WITH A 100 TIMES INCREASE IN SENSITIVITY. BOTH AMPLITUDE AND FIELD DIRECTION CAN BE OBTAINED AS WELL AS MEASUREMENTS OF SMALL CHANGES IN MAGNETIC FIELDS OF LOW AMPLITUDE AND GENERAL NOISE FIELD APPLICATION.

THE MAGNA PROBE IS DESIGNED FOR USE IN RELATIVELY UNIFORM, HOMOGENOUS MAGNETIC FIELDS (3 CU. FT. MIN) WHERE GRADIENTS ARE LOW WITH RESPECT TO PROBE DIMENSIONS.

2.0 ELECTRICAL AND PHYSICAL SPECIFICATIONS

2.1 SENSITIVITY - ALL MAGNA PROBES FEATURE A 100X SENSITIVITY INCREASE.
SENSITIVITY GAUSSMETER RANGE

MAGNA PROBE .01X DIVIDE RANGE BY 100
(100 TIMES MORE SENSITIVITY)

2.2 PROBE RANGE - 0 TO 2 GAUSS

2.3 LINEARITY - ±4 % OF READING

2.4 RESIDUAL FLUX - ±2% OF F.S (F.S.= 2 GAUSS)

2.5 FREQUENCY RESPONSE - DC TO 400 HERTZ

2.6 ELECTRICAL SCHEMATIC - REF (3)

2.7 STORAGE TEMP.RANGE - 0° TO + 75° C

2.8 WEIGHT - NET: 10 OZ

SHIPPING: 1 LB

3.0 CALIBRATION

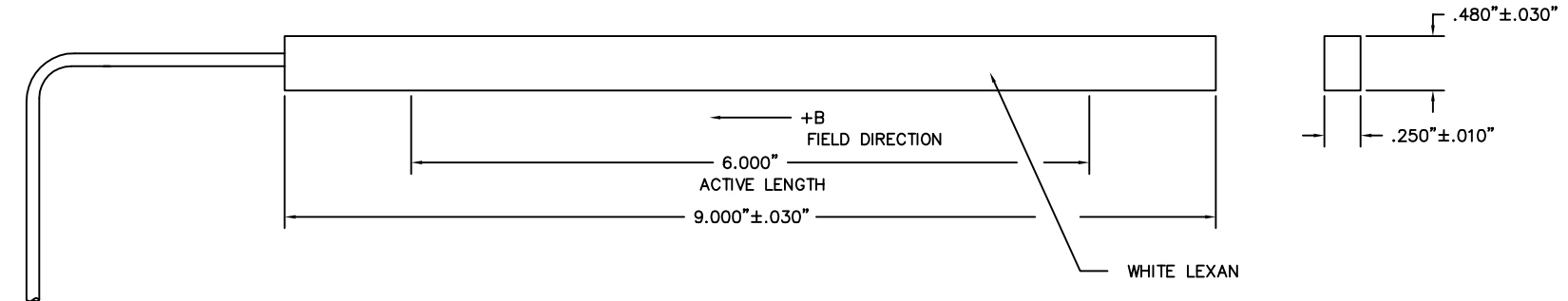
3.1 CALIBRATION IS REFERENCED TO A LABORATORY STANDARD MAGNET. THIS STANDARD IS MEASURED BY THE NUCLEAR MAGNETIC RESONANCE (NMR) TECHNIQUE, WHICH IS BASED ON ACCEPTED VALUES OF NATURAL PHYSICAL CONSTANTS.

3.2 PROBES ARE CALIBRATED TO INDICATED ACCURACY OVER THE SPECIFIED GAUSS RANGE WHEN USED WITH THE APPROPRIATE F. W. BELL GAUSSMETER. USE BEYOND THESE RANGES WILL SHOW LINEARITY ERROR GREATER THAN THE SPECIFICATIONS.

3.3 GAUSSMETER ERRORS MUST BE ADDED TO PROBE LINEARITY ERRORS TO OBTAIN OVERALL MEASURING ACCURACY.

4.0 SPECIAL PROBES

4.1 ELECTRICAL AND/OR PHYSICAL REQUIREMENTS NOT COVERED BY STANDARD PROBES MAY BE FURNISHED AS SPECIAL PROBES.



CABLE JACKET MATERIAL: BLACK PVC

0.196" DIAMETER NOMINAL

1.831" NOMINAL

.492" NOMINAL

CONNECTOR MANUFACTURER: NEUTRIK USA
INSERT: PA 6.6, BLACK COLOR, UL 94V-0 RATED, NEUTRIK P.N. MM1
HOUSING: CuZn39Pb3/ZnAl4Cu1 SATIN CHROMIUM PLATED, NEUTRIK P.N. MSC
CONTACTS: CuZn39Pb3/CuZn35Pb2/CuSn6 - 0.2um AuCo, NEUTRIK P.N. MPS

ACTIVE AREA	OP. TEMP RANGE	TEMP. STABILITY		HALL DEVICE TYPE
		ZERO	CAL	
6" X .25" (NOM)	0°C TO +75°C	±0.001 GAUSS /°C	-0.05 %/°C	YD-2381-008

3	REF	—	UB-5868	SCHEMATIC, 6000 SERIES PROBES
2	REF	—	UA-5871	MANUFACTURING PROCESS, MAGNAPROBES
1	REF	126882	YB-3926-03	MAGNAPROBE, MOW61-2506-30, 30 FT LONG
	REF	126881	YB-3926-02	MAGNAPROBE, MOW61-2506-15, 15 FT LONG
	REF	126880	YB-3926-01	MAGNAPROBE, MOW61-2506-05, 5 FT LONG
REF	QTY	ITEM NO.	DRAWING NO.	DESCRIPTION
UNLESS OTHERWISE SPECIFIED:		THIS DRAWING IS THE PROPERTY OF BELL TECHNOLOGIES, INC. AND MAY NOT BE COPIED, USED OR DISCLOSED FOR ANY PURPOSE WITHOUT AS AUTHORIZED BY WRITEUP BY BELL TECHNOLOGIES, INC.		
(DO NOT SCALE TO DIMS)				
SCALE	NONE	DRN	10-01-98 JTM	TITLE SPECIFICATIONS, 6000 SERIES MAGNAPROBES
DEC±	.250	APPD	10-02-98 MS	
FRAC±	—	QA APPD	10-02-98 RMB	SHT 1 OF 1
ANG±	—	REL	10-02-98 JTM	
DWG NO.				UC-5869
REV				A