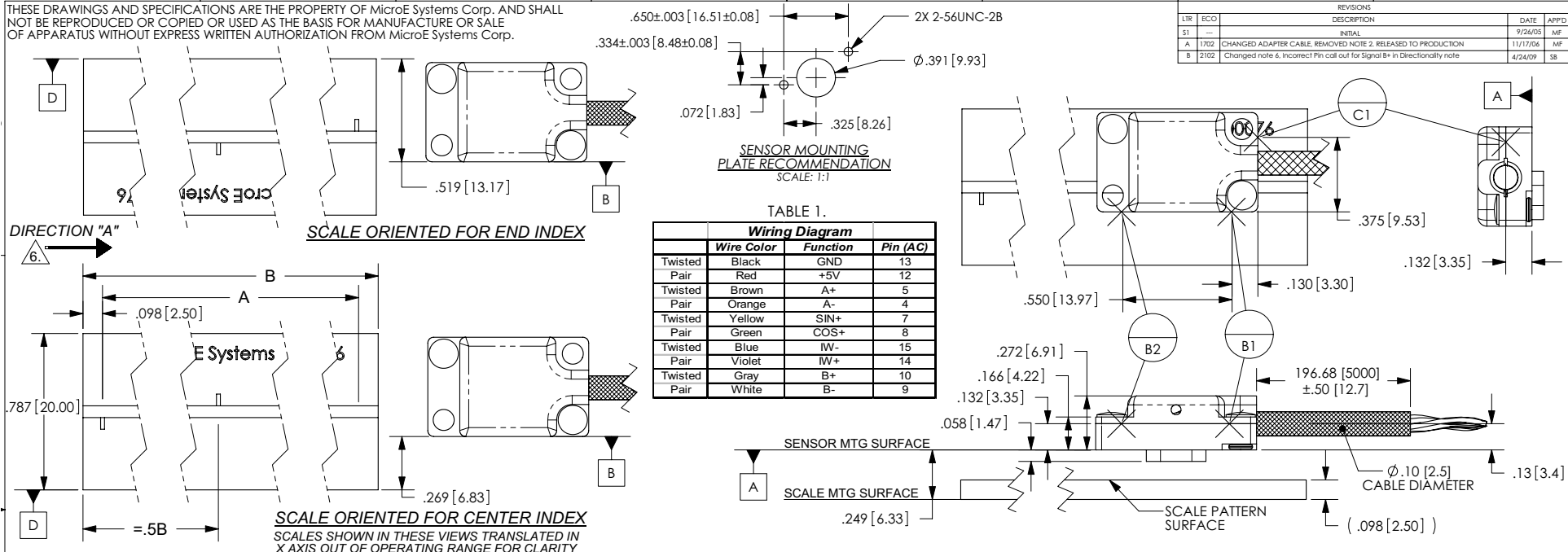
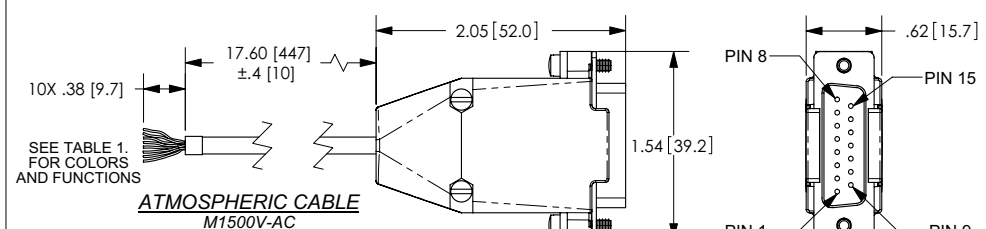


Mercury 1500V Encoder System Interface Drawing: Long Linear Scales

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REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPD
S1	---	INITIAL	9/26/05	MF
A	1702	CHANGED ADAPTER CABLE, REMOVED NOTE 2, RELEASED TO PRODUCTION	11/17/06	MF
B	2102	Changed note 6, incorrect Pin call out for Signal B+ in Directionality note	4/24/09	SB



- NOTES:**
- RECOMMENDED MOUNTING HARDWARE:
2-56 OR M2 SCREWS w/ 4 FLAT WASHERS (2 ON EACH SCREW)
(OD OF WASHER NOT TO EXCEED .150 [3.81])
 - IF BENCHING PINS ARE TO BE USED, PINS MUST BE PLACED ALONG DATUM EDGES OF BOTH THE SENSOR AND THE SCALE FOR PROPER ALIGNMENT. (REFERENCE DATUMS B1, B2 AND C1 FOR SENSOR BENCHING PINS).
 - HEIGHT OF SENSOR BENCHING PINS MUST BE A MINIMUM OF .170 [4.32] IN HEIGHT FROM DATUM A.
 - HEIGHT OF SCALE BENCHING PINS NOT TO EXCEED THE THICKNESS OF THE SCALE.
 - RECOMMENDED SENSOR MOUNTING PLATE THICKNESS:
MINIMUM- 4 SCREW THREADS
MAXIMUM- ALLOW CLEARANCE FOR SCALE AND SCALE MOUNTING HARDWARE
(BENCHING SURFACES, CLAMPS, HUBS, ETC.)

6. WHEN SCALE MOVES IN DIRECTION "A" WITH RESPECT TO A STATIONARY READHEAD, OUTPUT SIGNAL B+ (GRAY [PIN 10]) LEADS OUTPUT SIGNAL A+ (BROWN [PIN 5]).

SCALE IDENTIFICATION AND SIZE

Scale Identification #	Dim A. Measured Length	Dim B. Scale Length
LXX	XXmm-5mm	XXmm
L155	155mm-5mm = 150mm	155mm
(max) L2025	2025mm-5mm = 2020mm	2025mm

UNITS: in, [mm]

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)
DIM. APPLY AFTER PROCESSING INTERPRET ALL GEOMETRIC TOLS. PER ANSI Y14.5M-1994

TOLERANCES ARE:
DECIMALS: .XX [X] ±.01 [25]
.XXX [XX] ±.005 [13]

APPROVALS DATE
DRAWN: S.BUTURLIA 9/20/05
CHECKED
ENGRG: P.REMILLARD 11/16/06
MFG ENG: T.GARCIA 11/16/06
DIA: A.VILLARROEL 11/16/06

MicroE Systems
Division of GSI
125 Middlesex Turnpike
Bedford, Ma 01730

DESCRIPTION:
**INTERFACE, ENCODER, 20um,
LONG LINEAR, MERCURY
1500 VACUUM SENSOR**

SIZE: B DWG. NO. ID-00323 REV. B
SCALE: 1:1 CAD FILE: SHEET 1 OF 1

Mercury 1500V Encoder System Interface Drawing: Rotary Scales

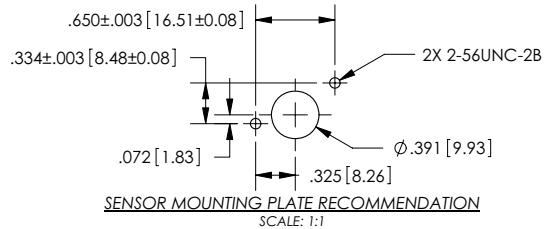
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SCALE IDENTIFICATION AND SIZE. DIMENSIONS IN INCHES [MILLIMETERS]

Scale	Counts/Rev	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E
Identification	Rev	Scale O.D.	Optical Dia.	Mounting Dim.	Scale I.D.	Scale Thickness
R1206	1,650	0.472 [12.00]	0.413 [10.50]	0.348+/- .002 [8.84+/- .05]	.250+/- .005 [6.35+/- .13]	.036+/- .002 [.91+/- .05]
R1910	2,500	0.750 [19.05]	0.627 [15.92]	0.454+/- .002 [11.53+/- .05]	.375+/- .005 [9.53+/- .10]	.090+/- .004 [2.29+/- .10]
R3213	4,096	1.250 [31.75]	1.027 [26.08]	0.654+/- .002 [16.62+/- .05]	.500+/- .005 [12.70+/- .13]	.090+/- .004 [2.29+/- .10]
R5725	8,192	2.250 [57.15]	2.053 [52.15]	1.168+/- .002 [29.66+/- .05]	1.000+/- .005 [25.40+/- .13]	.090+/- .004 [2.29+/- .10]
R10851	16,384	4.250 [107.95]	4.106 [104.30]	2.194+/- .002 [55.73+/- .05]	2.000+/- .005 [50.80+/- .13]	.090+/- .004 [2.29+/- .10]

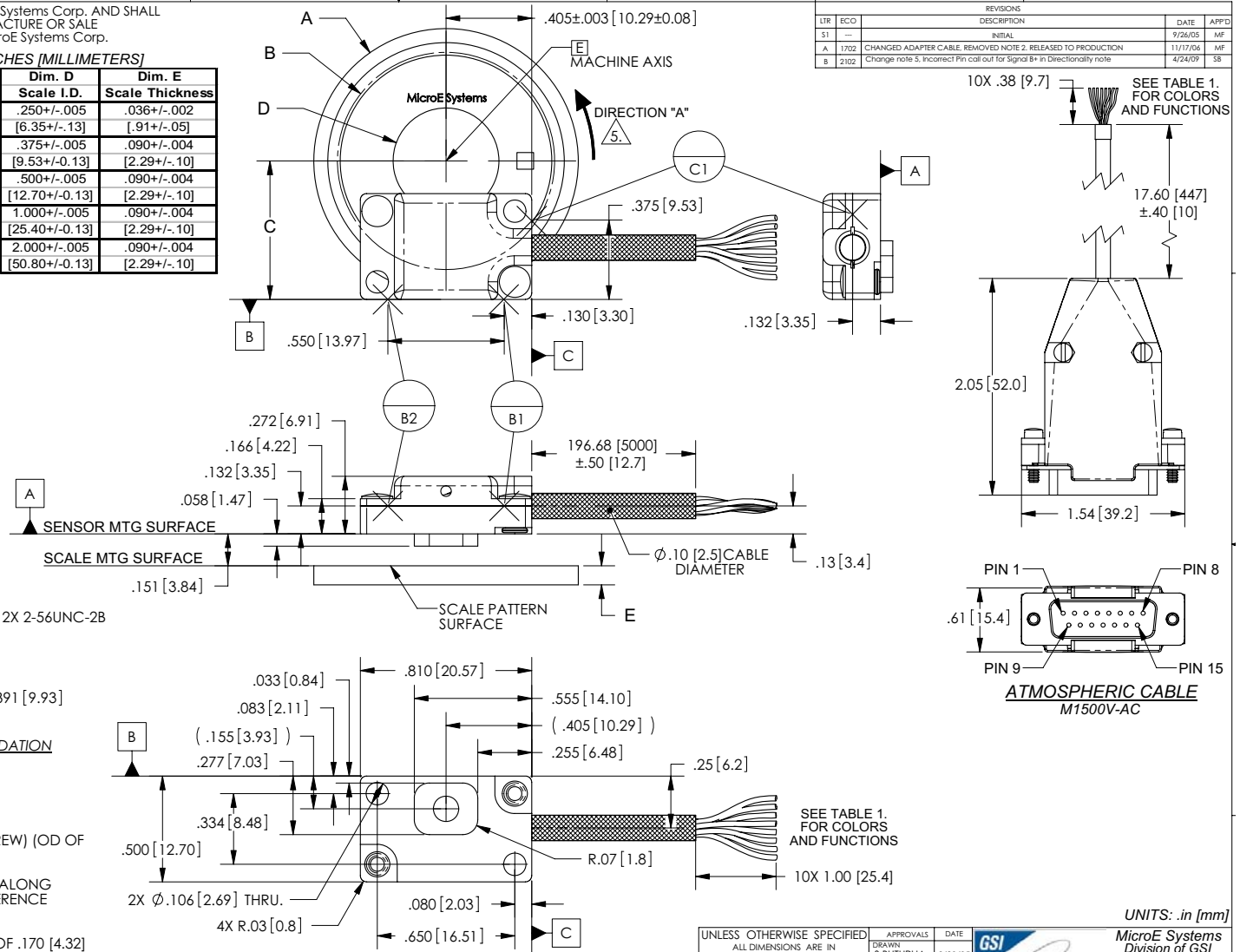
TABLE 1.

Wiring Diagram			
	Wire Color	Function	Pin (AC)
Twisted Pair	Black	GND	13
	Red	+5V	12
Twisted Pair	Brown	A+	5
	Orange	A-	4
Twisted Pair	Yellow	SIN+	7
	Green	COS+	8
Twisted Pair	Blue	IW-	15
	Violet	IW+	14
Twisted Pair	Gray	B+	10
	White	B-	9



- NOTES:**
- RECOMMENDED MOUNTING HARDWARE: 2-56 OR M2 SCREWS w/ 4 FLAT WASHERS (2 ON EACH SCREW) (OD OF WASHER NOT TO EXCEED .150 [3.81])
 - IF BENCHING PINS ARE TO BE USED, PINS MUST BE PLACED ALONG DATUM EDGES OF SENSOR FOR PROPER ALIGNMENT. (REFERENCE DATUMS B1, B2 AND C1).
 - HEIGHT OF SENSOR BENCHING PINS MUST BE A MINIMUM OF .170 [4.32] IN HEIGHT FROM DATUM A.
 - RECOMMENDED SENSOR MOUNTING PLATE THICKNESS: MINIMUM- 4 SCREW THREADS MAXIMUM- ALLOW CLEARANCE FOR SCALE AND SCALE MOUNTING HARDWARE (BENCHING SURFACES, CLAMPS, HUBS, ETC.)

5. WHEN SCALE MOVES IN DIRECTION "A" WITH RESPECT TO A STATIONARY READHEAD, OUTPUT SIGNAL B+ (GRAY [PIN 10]) LEADS OUTPUT SIGNAL A+ (BROWN [PIN 5]).



LTR		ECG		DESCRIPTION	DATE	APP'D
S1		---		INITIAL	9/26/03	MF
A		1902		CHANGED ADAPTER CABLE. REVISED NOTE 3. RELEASED TO PRODUCTION	11/17/04	MF
B		2102		Change note 5. Incorrect Pin call out for Signal B+ in Directionality note	4/24/09	SB

UNLESS OTHERWISE SPECIFIED		APPROVALS	DATE	GSI MicroE Systems® 125 Middlesex Turnpike Bedford, Ma 01730	DESCRIPTION: INTERFACE, ENCODER, 20um, ROTARY, MERCURY 1500 VACUUM SENSOR
ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]		S.BUTURLIA	9/20/03		
DIM. APPLY AFTER PROCESSING INTERPRET ALL GEOMETRIC TOLS. PER ANSI Y14.5M-1994		CHECKED			
TOLERANCES ARE:		ENGRG. P.REMILLARD	11/16/04		
DECIMALS: .XX [X]±.01 [25] .XXX [XX]±.005 [13]		MFG ENG T.GARCIA	11/16/04		
ANGULAR: ±30 MIN.		GR: A.VILLARROEL	11/16/04		
SIZE B	DWG. NO. ID-00324				
SCALE: 1:1	CAD FILE:				SHEET 1 OF 1