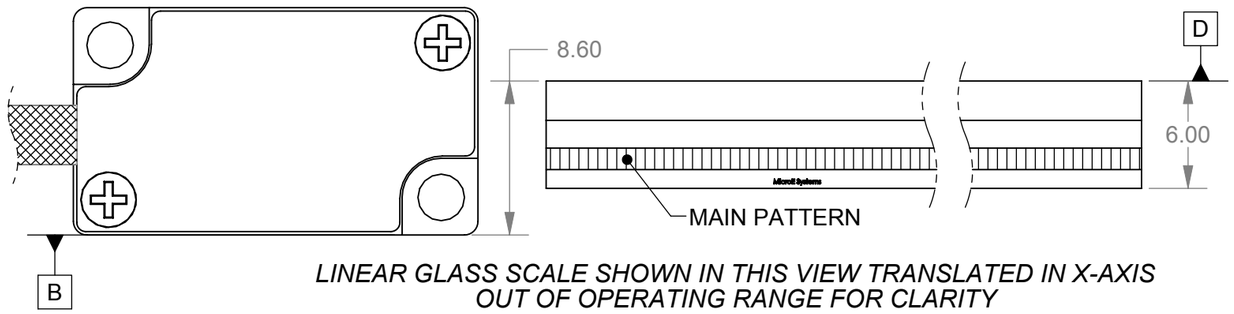
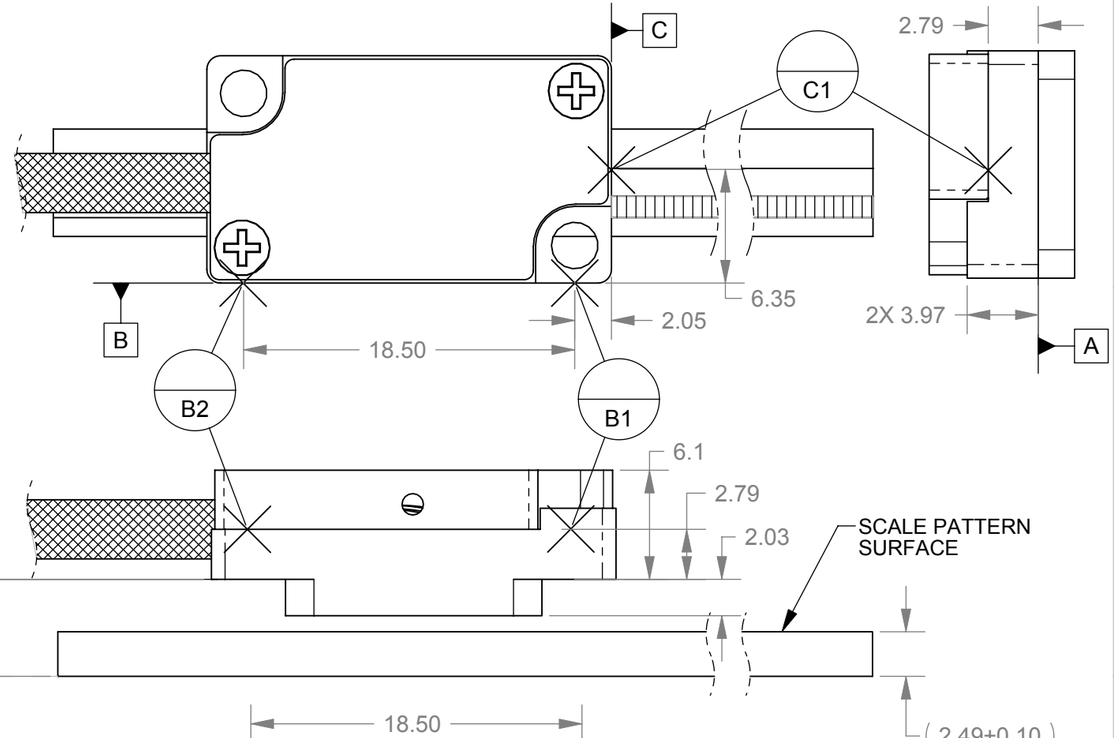
REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVED
1	-----	INITIAL	9/29/09	VB

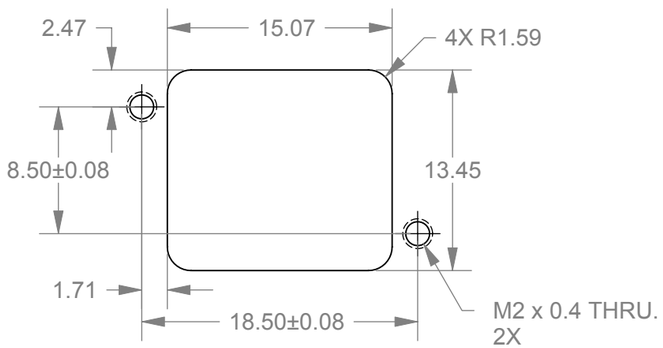
6.

DIRECTION "A"

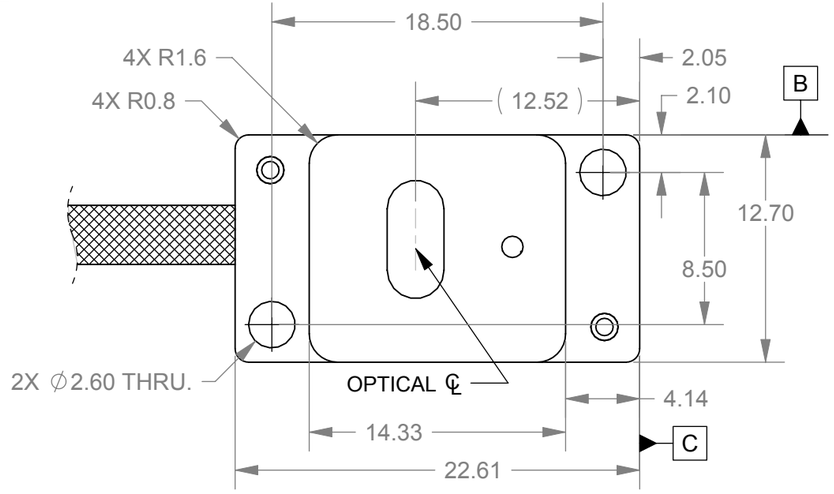


LINEAR GLASS SCALE SHOWN IN THIS VIEW TRANSLATED IN X-AXIS OUT OF OPERATING RANGE FOR CLARITY





SENSOR MOUNTING PLATE RECOMMENDATION



NOTES:

1. RECOMMENDED MOUNTING HARDWARE:
   M2 x 6mm SOCKET HEAD CAP SCREWS

2. 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).

3. HEIGHT OF SENSOR BENCHING PINS MUST NOT EXCEED HEIGHT OF SENSOR BODY (2.79mm).

4. HEIGHT OF SCALE BENCHING PINS NOT TO EXCEED THE THICKNESS OF THE SCALE.

5. RECOMMENDED SENSOR MOUNTING PLATE THICKNESS:
   MINIMUM: 4 SCREW THREADS
   MAXIMUM: ALLOW FOR CLEARANCE TO SCALE AND SCALE MOUNTING HARDWARE (BENCHING SURFACE, TRENCHES, ETC).

6. WHEN SCALE MOVES IN DIRECTION "A" WITH RESPECT TO A STATIONARY SENSOR, OUTPUT SIGNAL A+ (PIN 14) LEADS OUTPUT SIGNAL B+ (PIN 13). THIS APPLIES TO QUADRATURE SENSOR ONLY.

UNITS: mm

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

TOLERANCES ARE:
DECIMALS: .X ±.25 .XX ±.13
ANGULAR: ±30 MIN.

APPROVALS	DATE
DRAWN S.BUTURLIA	9/24/09
CHECKED	
ENGRG.	
MFG ENG	
QA	

SUBJECT TO CHANGE WITHOUT NOTIFICATION

GSI MicroE Systems
MicroE Systems
Division of GSI Group
125 Middlesex Tpk.
Bedford, MA 01730

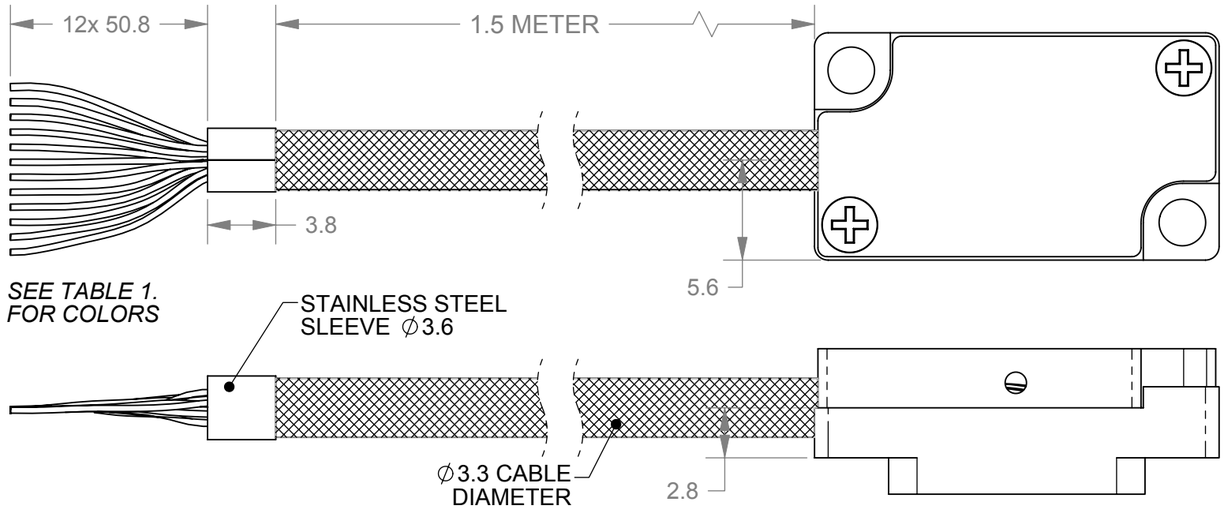
DESCRIPTION:
INTERFACE, ENCODER, 20um
SHORT LINEAR
MERCURY II 6000 VACUUM SENSOR

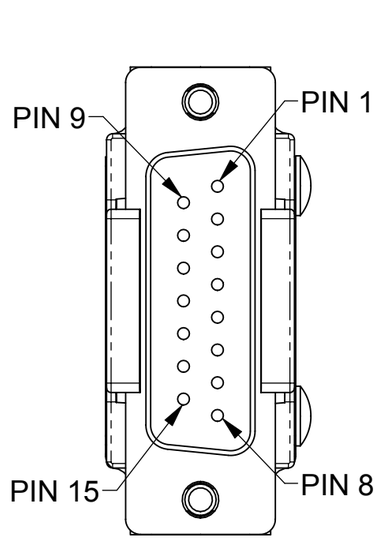
SIZE	DWG. NO.	REV.
B	ID-00371	1

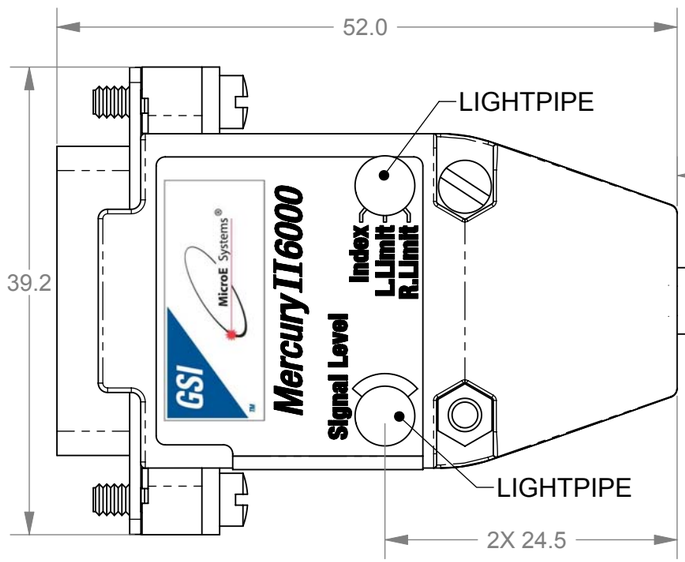
SCALE: | CAD FILE: | 3rd ANGLE PROJECTION | SHEET 1 OF 2

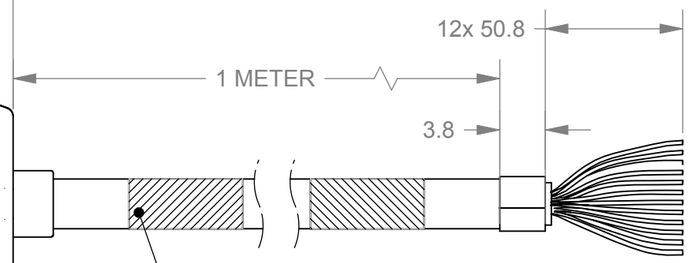
TABLE 1.

Wires	***Wire color***
Twisted	Black
Pair	Red
Twisted	Green
Pair	White
Twisted	Blue
Pair	White
Twisted	Violet
Pair	White
Twisted	Gray
Pair	White
Twisted	Brown
Pair	White

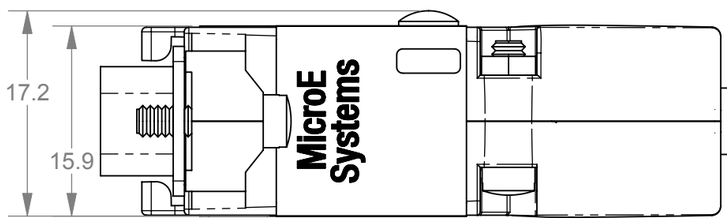








SEE TABLES 2 and 3 FOR PIN FUNCTIONS



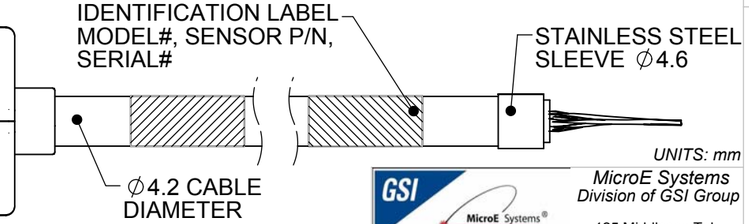


TABLE 2.

Mercury II 6000 15-Plug	
Quadrature Output	
Pin	***Function***
1	RL+
3	RL-
2	GND
7	5V
4	I-
12	I+
5	B-
13	B+
6	A-
14	A+
8	5V
9	GND
10	LL+
11	LL-
15	ALARM

TABLE 3.

Mercury II 6000 15-Plug	
Serial Output	
Pin	***Function***
1	nCS+
3	nCS-
2	GND
7	5V
4	DIAG_IN_OUT-
12	DIAG_IN_OUT+
5	SCLOCK_OUT-
13	SCLOCK_OUT+
6	SDATA_OUT-
14	SDATA_OUT+
8	5V
9	GND
10	SCLOCK_IN+
11	SCLOCK_IN-
15	ALARM

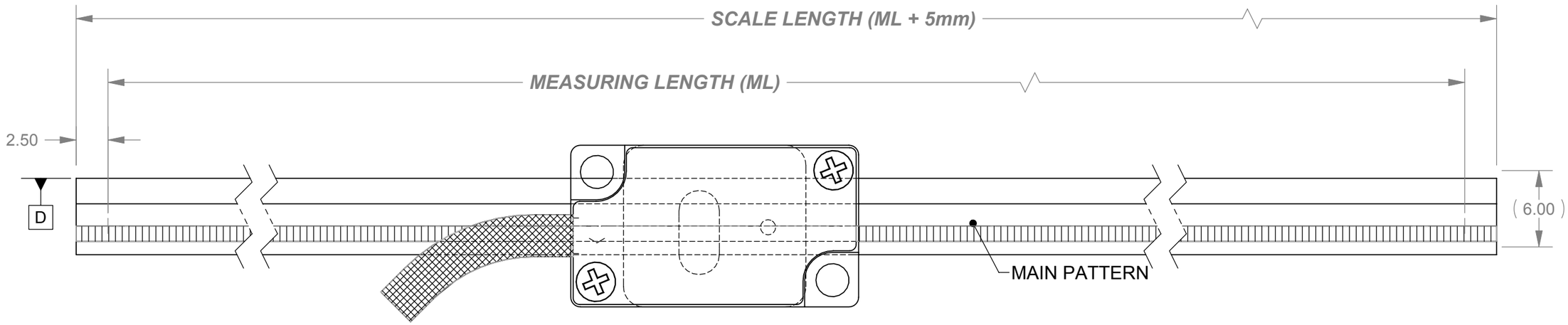
UNITS: mm

MicroE Systems
Division of GSI Group
125 Middlesex Tpk.
Bedford, MA 01730

DESCRIPTION:
INTERFACE, ENCODER, 20um
SHORT LINEAR,
MERCURY II 6000 VACUUM SENSOR

SIZE	DWG. NO.	REV.
B	ID-00371	1

SCALE: | CAD FILE: | 3rd ANGLE PROJECTION | SHEET 2 OF 3



NOTES:

1. LINEAR GLASS SCALES CAN HAVE INDEX AND LIMIT MARKERS PRINTED ON THEM IN LOCATIONS DESIRED BY CUSTOMER. CONTACT MICROE SYSTEMS FOR FURTHER DETAILS.

SCALE IDENTIFICATION AND SIZES:

Scale Identification	***Measuring Length (ML)***	***Scale Length***
MIIL**XXX**	**XXX**mm - 5mm	**XXX**mm
(Min.) MIIL10	10mm - 5mm = 5mm	10mm
(Max.) MIIL130	130mm - 5mm = 125mm	130mm

UNITS: mm

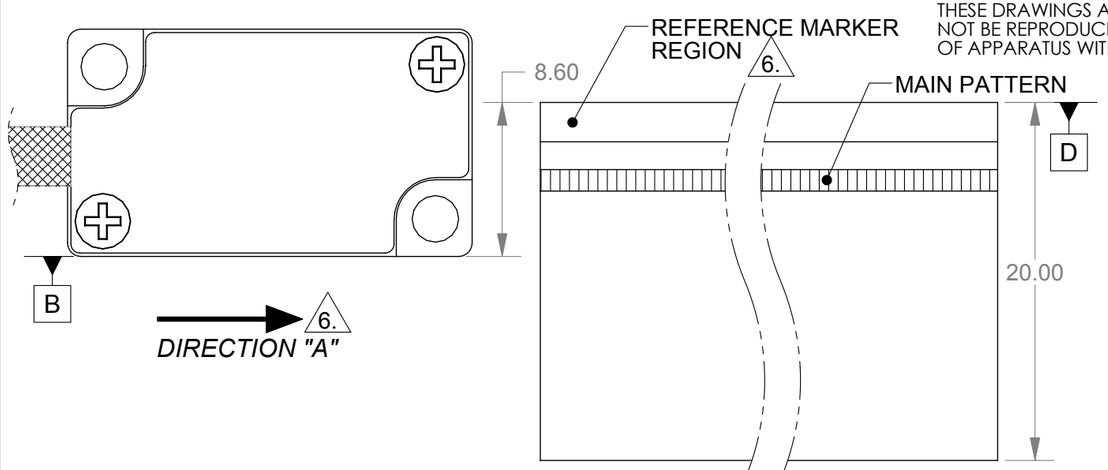
MicroE Systems
Division of GSI Group
125 Middlesex Tpk.
Bedford, MA 01730

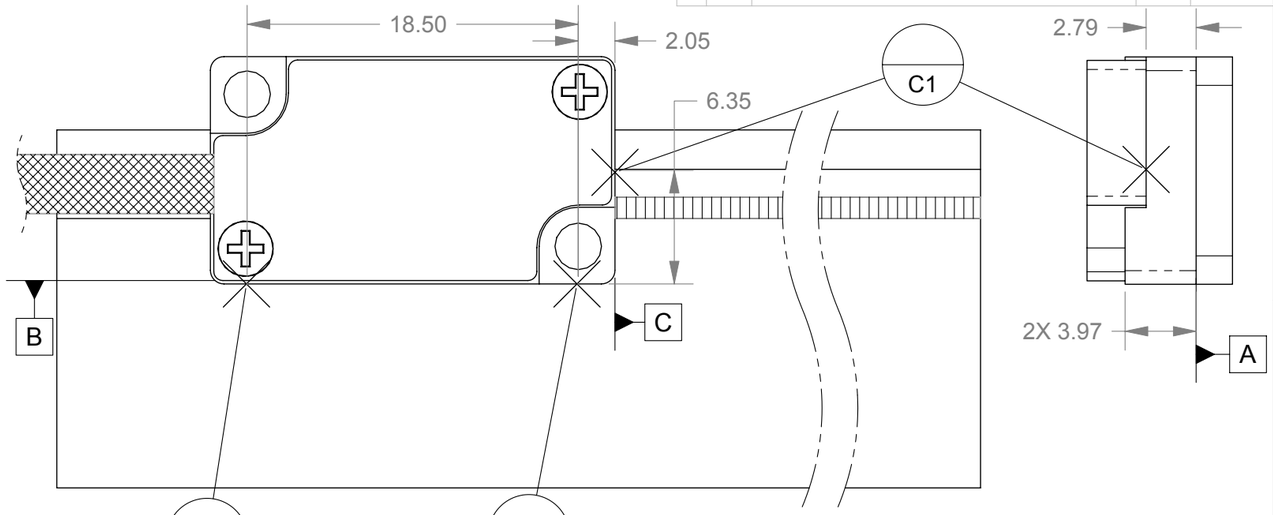
DESCRIPTION:
INTERFACE, ENCODER, 20um
SHORT LINEAR,
MERCURY II 6000 VACUUM SENSOR

SIZE	DWG. NO.	REV.
B	ID-00371	1

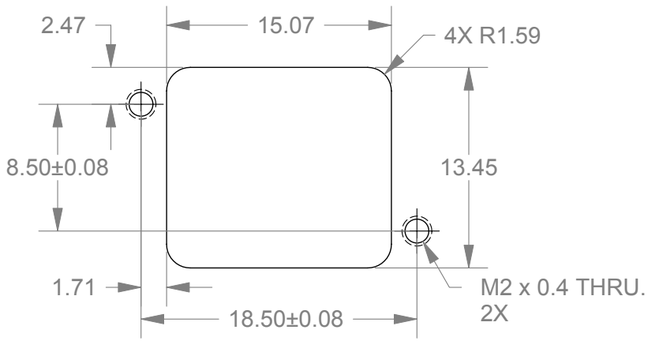
SCALE: | CAD FILE: | 3rd ANGLE PROJECTION | SHEET 3 OF 3

REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVED
1	----	INITIAL	9/29/09	VB

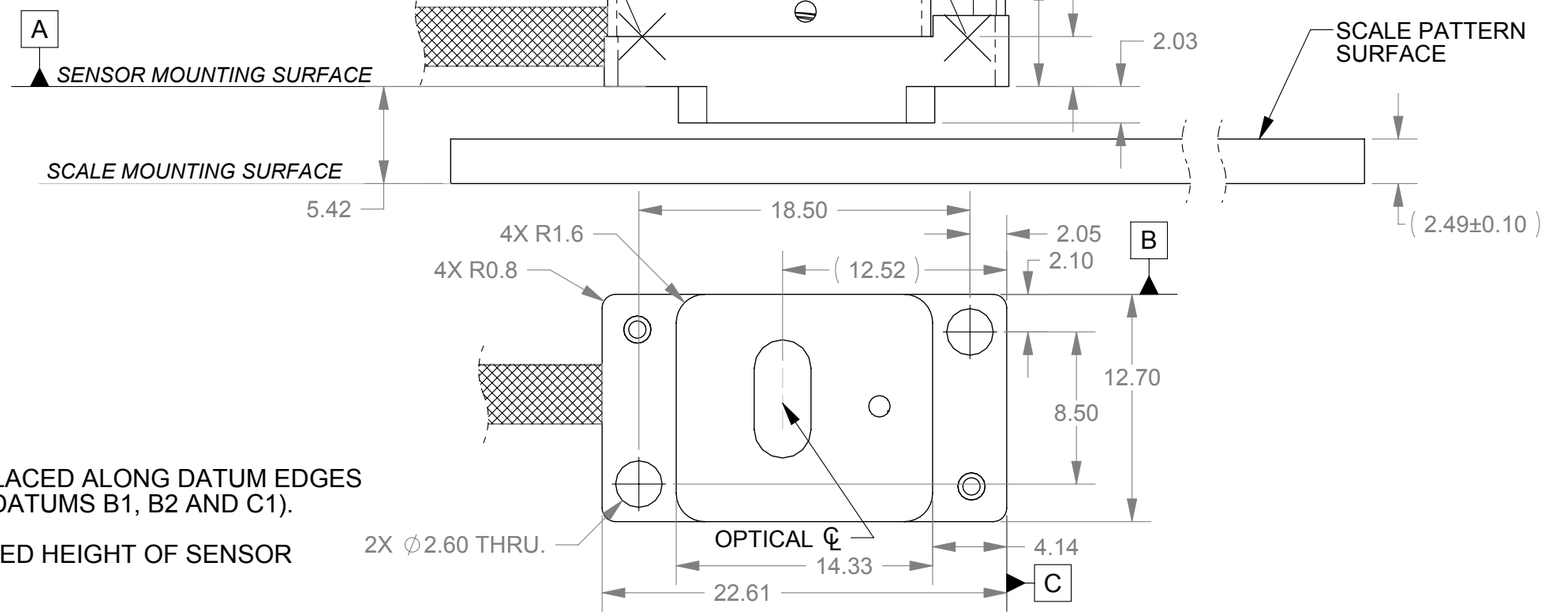




LINEAR GLASS SCALE SHOWN IN THIS VIEW TRANSLATED IN X-AXIS OUT OF OPERATING RANGE FOR CLARITY



SENSOR MOUNTING PLATE RECOMMENDATION



NOTES:

1. RECOMMENDED MOUNTING HARDWARE:
   M2 x 6mm SOCKET HEAD CAP SCREWS

2. 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).

3. HEIGHT OF SENSOR BENCHING PINS MUST NOT EXCEED HEIGHT OF SENSOR BODY (2.79mm).

4. HEIGHT OF SCALE BENCHING PINS NOT TO EXCEED THE THICKNESS OF THE SCALE.

5. RECOMMENDED SENSOR MOUNTING PLATE THICKNESS:
   MINIMUM: 4 SCREW THREADS
   MAXIMUM: ALLOW FOR CLEARANCE TO SCALE AND SCALE MOUNTING HARDWARE (BENCHING SURFACE, TRENCHES, ETC).

6. WHEN SCALE MOVES IN DIRECTION "A" WITH RESPECT TO A STATIONARY SENSOR, OUTPUT SIGNAL A+ (PIN 14) LEADS OUTPUT SIGNAL B+ (PIN 13). THIS APPLIES TO QUADRATURE SENSOR ONLY.

UNITS: mm

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

TOLERANCES ARE:
DECIMALS: .X ± .25, .XX ± .13
ANGULAR: ±30 MIN.

APPROVALS	DATE
DRAWN S.BUTURLIA	9/21/09
CHECKED	
ENGRG.	
MFG ENG	
QA	

SUBJECT TO CHANGE WITHOUT NOTIFICATION

MicroE Systems
Division of GSI Group
125 Middlesex Tpk.
Bedford, MA 01730

DESCRIPTION:
INTERFACE, ENCODER, 20um
LONG LINEAR,
MERCURY II 6000 VACUUM SENSOR

SIZE	DWG. NO.	REV.
B	ID-00372	1

SCALE: | CAD FILE: | 3rd ANGLE PROJECTION | SHEET 1 OF 3

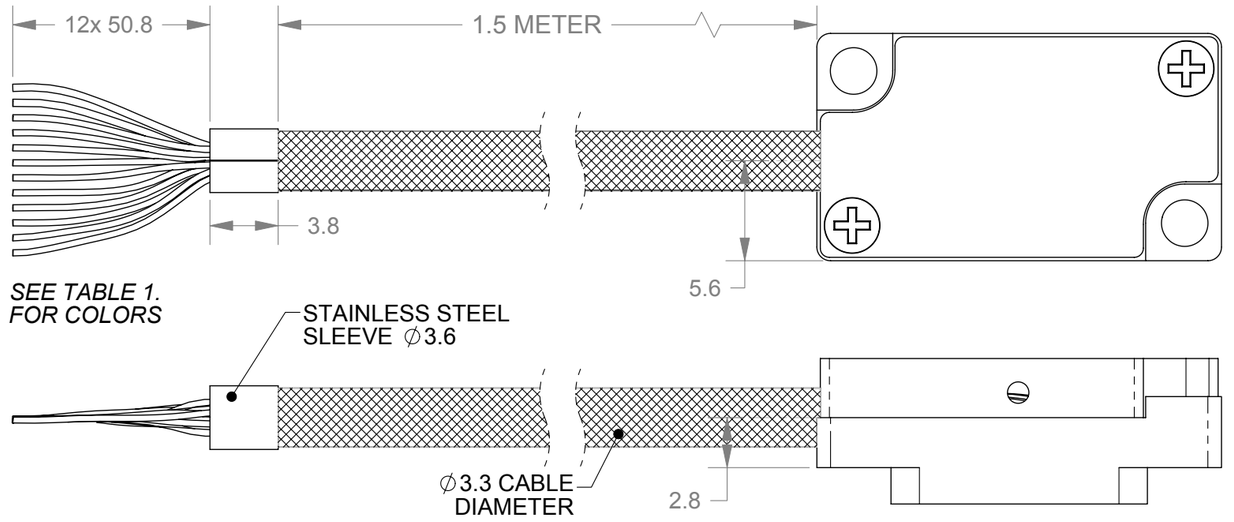
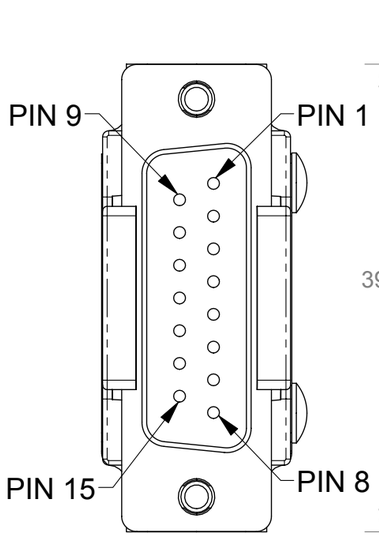
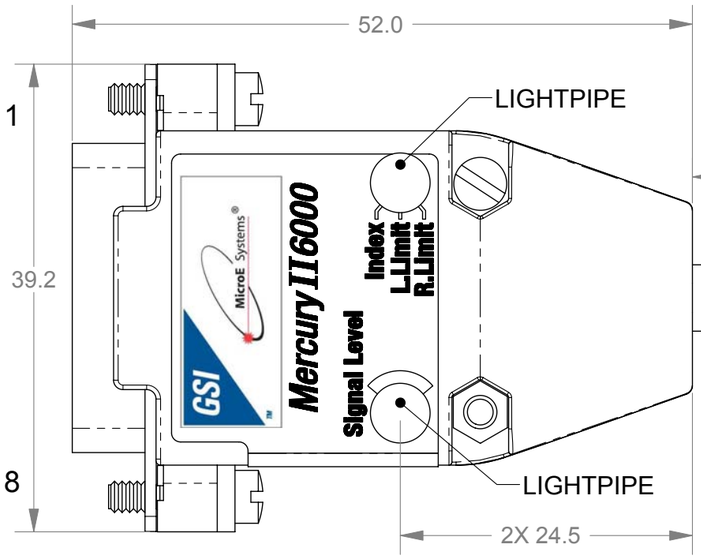
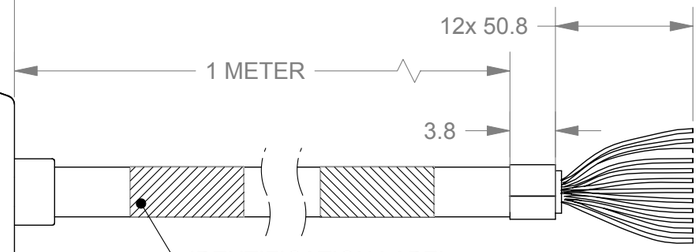


TABLE 1.

Wires	*Wire color*
Twisted	Black
Pair	Red
Twisted	Green
Pair	White
Twisted	Blue
Pair	White
Twisted	Violet
Pair	White
Twisted	Gray
Pair	White
Twisted	Brown
Pair	White







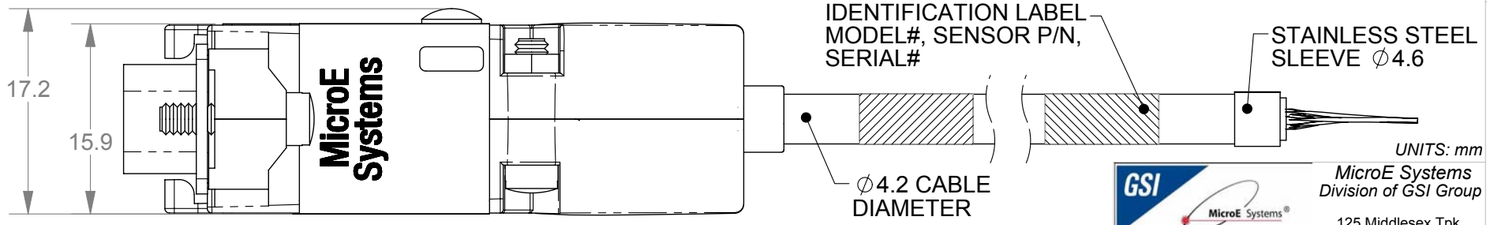
SEE TABLES 2 and 3 FOR PIN FUNCTIONS

TABLE 2.

Mercury II 6000 15-Plug Quadrature Output	
Pin	*Function*
1	RL+
3	RL-
2	GND
7	5V
4	I-
12	I+
5	B-
13	B+
6	A-
14	A+
8	5V
9	GND
10	LL+
11	LL-
15	ALARM

TABLE 3.

Mercury II 6000 15-Plug Serial Output	
Pin	*Function*
1	nCS+
3	nCS-
2	GND
7	5V
4	DIAG_IN_OUT-
12	DIAG_IN_OUT+
5	SCLOCK_OUT-
13	SCLOCK_OUT+
6	SDATA_OUT-
14	SDATA_OUT+
8	5V
9	GND
10	SCLOCK_IN+
11	SCLOCK_IN-
15	ALARM



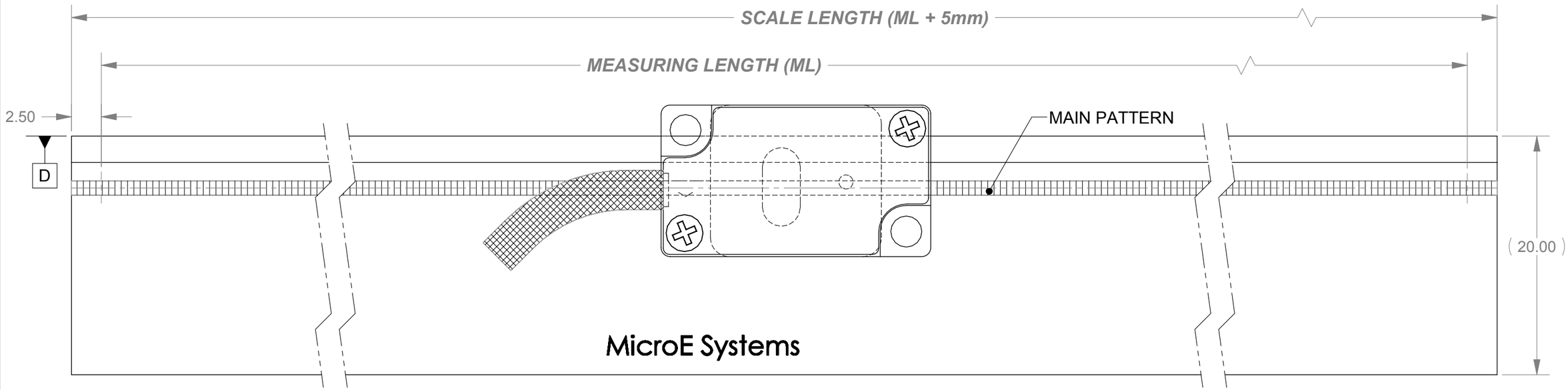
UNITS: mm

MicroE Systems
Division of GSI Group
125 Middlesex Tpk.
Bedford, MA 01730

DESCRIPTION:
INTERFACE, ENCODER, 20um
LONG LINEAR,
MERCURY II 6000 VACUUM SENSOR

SIZE	DWG. NO.	REV.
B	ID-00372	1

SCALE: | CAD FILE: | 3rd ANGLE PROJECTION | SHEET 2 OF 3



NOTES:

1. LINEAR GLASS SCALES CAN HAVE INDEX AND LIMIT MARKERS PRINTED ON THEM IN LOCATIONS DESIRED BY CUSTOMER. CONTACT MICROE SYSTEMS FOR FURTHER DETAILS.

SCALE IDENTIFICATION AND SIZES:

Scale Identification	***Measuring Length (ML)***	***Scale Length***
MIIL**XXXX**	**XXXX**mm - 5mm	**XXXX**mm
(Min.) MIIL0135	135mm - 5mm = 130mm	135mm
(Max.) MIIL1000	1000mm - 5mm = 995mm	1000mm

UNITS: mm

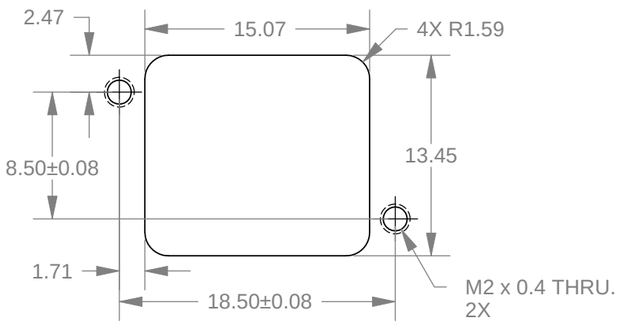
MicroE Systems
Division of GSI Group
125 Middlesex Tpk.
Bedford, MA 01730

DESCRIPTION:
INTERFACE, ENCODER, 20um
LONG LINEAR,
MERCURY II 6000 VACUUM SENSOR

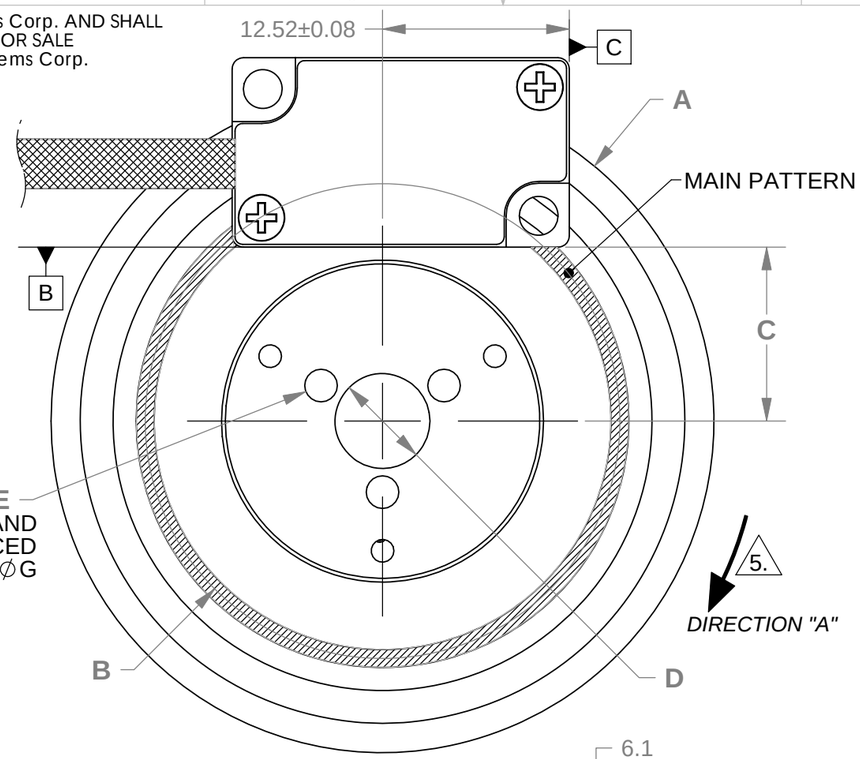
SIZE	DWG. NO.	REV.
B	ID-00372	1

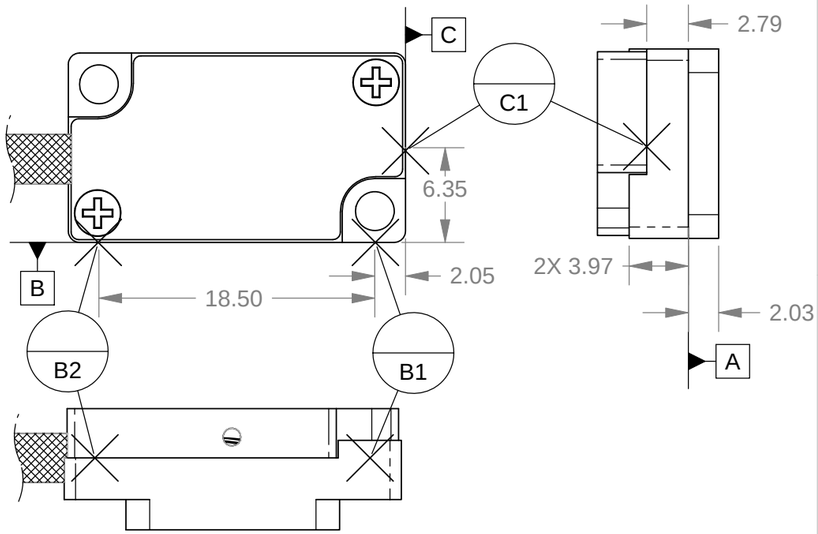
SCALE: | CAD FILE: | 3rd ANGLE PROJECTION | SHEET 3 OF 3

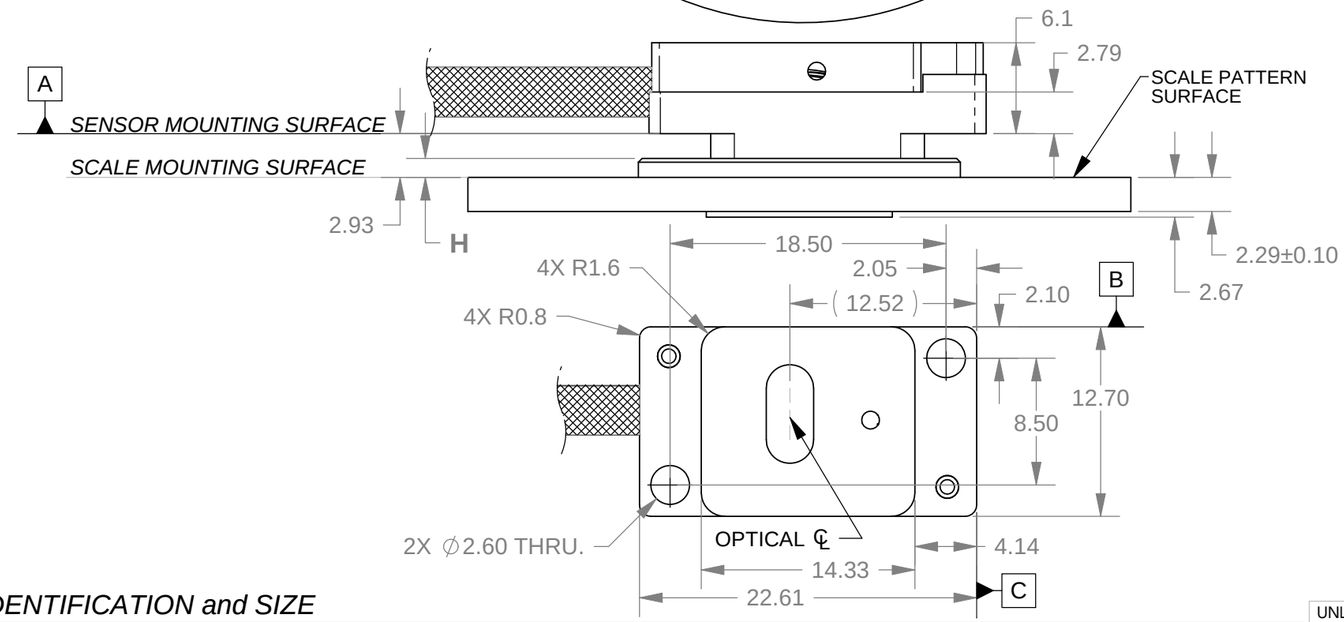
REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVED
1	-----	INITIAL	9/29/09	VB
2	2262	CENTER OF GRATING TO SENSORD BODY EDGE (DATUM C) INCORRECT. WAS 11.19	8/11/10	VB



SENSOR MOUNTING PLATE RECOMMENDATION







NOTES:

1. RECOMMENDED MOUNTING HARDWARE:
   M2 x 6mm SOCKET HEAD CAP SCREWS
2. 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).
3. HEIGHT OF SENSOR BENCHING PINS MUST NOT EXCEED HEIGHT OF SENSOR BODY (2.79mm).
4. RECOMMENDED SENSOR MOUNTING PLATE THICKNESS:
   MINIMUM: 4 SCREW THREADS
   MAXIMUM: ALLOW FOR CLEARANCE TO SCALE AND SCALE MOUNTING HARDWARE (BENCHING SURFACE, TRENCHES, ETC).

5. WHEN SCALE MOVES IN DIRECTION "A" WITH RESPECT TO A STATIONARY SENSOR, OUTPUT SIGNAL A+ (PIN 14) LEADS OUTPUT SIGNAL B+ (PIN 13).
   THIS APPLIES TO QUADRATURE SENSOR ONLY.

SCALE/HUB IDENTIFICATION and SIZE

Scale/Hub Identification	Counts/ Rev	Dim. A Scale O.D.	Scale I.D.	Dim. B Optical Dia.	Dim. C Mounting Dim.	Dim D. Hub I.D.	Dim E. Mntg Hole Dia.	Thread F	Dim G. Bolt Circle	Dim. H Hub Height
R4513 / HI	5,000	44.45	12.70+/-0.13	31.83	11.66+/-0.05	6.358+.013/-.000	1.78	2-56	9.53	1.27
R6425 / HJ	8,192	63.50	25.40+/-0.13	52.15	21.82+/-0.05	12.708+.013/-.000	3.45	8-32	19.05	1.52
R12151 / HK	16,384	120.65	50.80+/-0.13	104.30	47.90+/-0.05	25.408+.013/-.000	3.45	8-32	38.10	2.03

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

TOLERANCES ARE:
DECIMALS: .X ± .25, .XX ± .13
ANGULAR: ±30 MIN.

APPROVALS	DATE
DRAWN S.BUTURLIA	9/28/09
CHECKED	
ENGRG.	
MFG ENG	
QA	

SUBJECT TO CHANGE WITHOUT NOTIFICATION

UNITS: mm

MicroE Systems
Division of GSI Group
125 Middlesex Tpk.
Bedford, MA 01730

DESCRIPTION:
INTERFACE, ENCODER, 20um
ROTARY SCALE w/INDEX and HUB,
MERCURY II 6000 VACUUM SENSOR

SIZE B | DWG. NO. ID-00373 | REV. 2
SCALE: | CAD FILE: | 3rd ANGLE PROJECTION | SHEET 1 OF 2

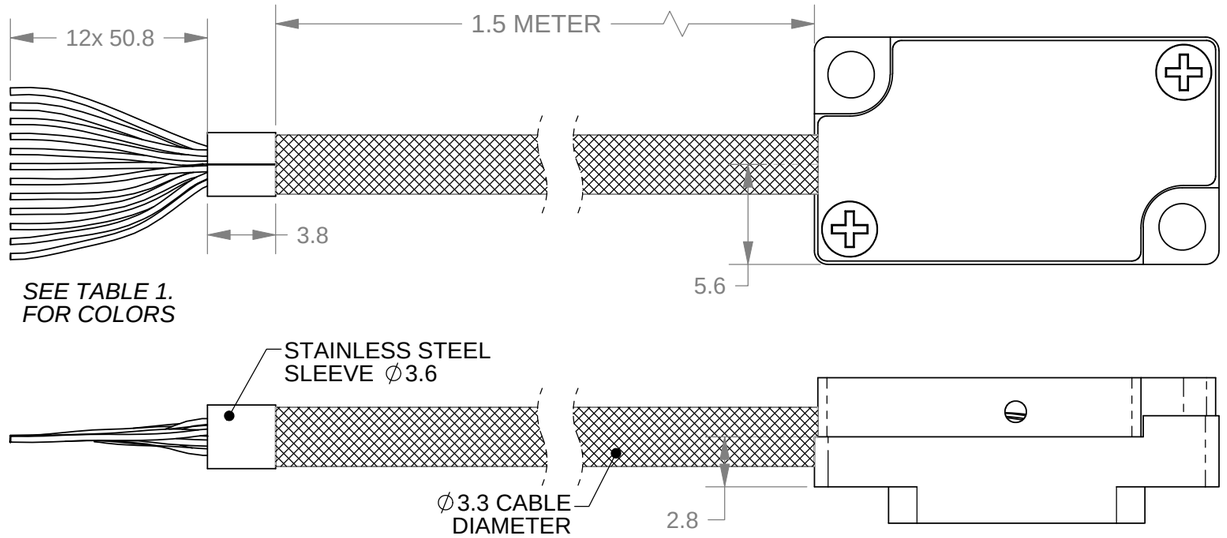
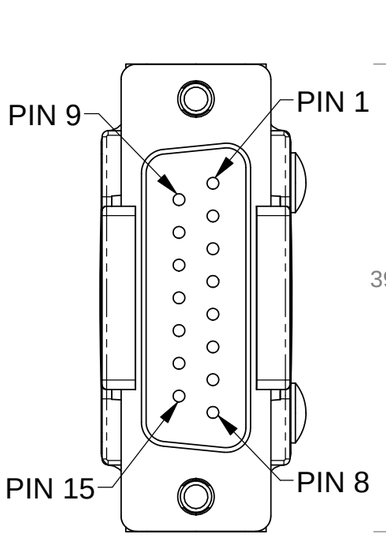
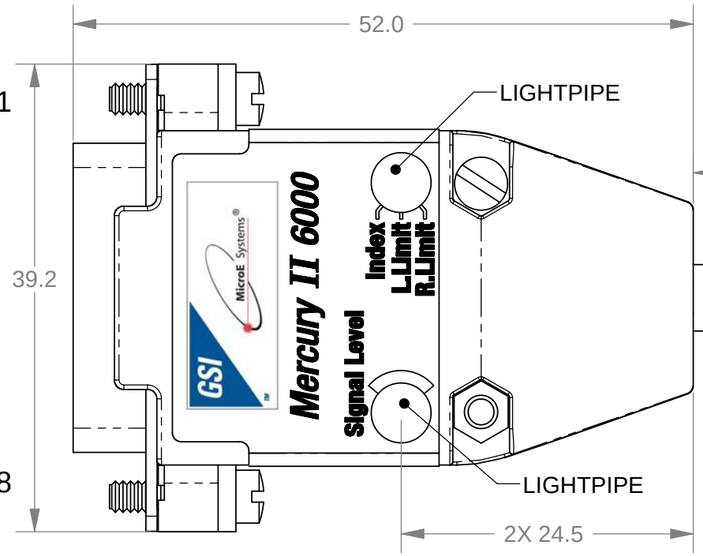


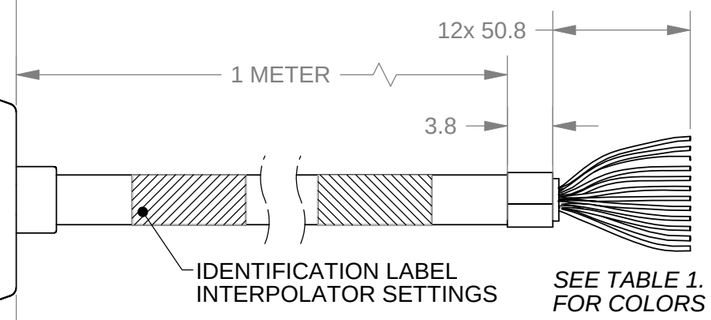
TABLE 1.

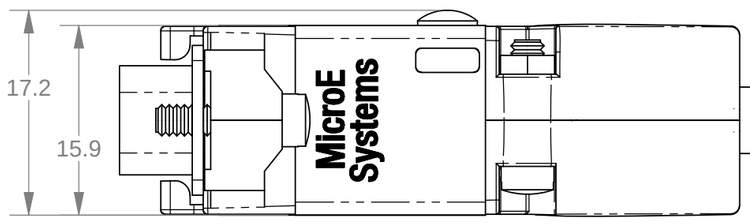
Wires	*Wire color*
Twisted	Black
Pair	Red
Twisted	Green
Pair	White
Twisted	Blue
Pair	White
Twisted	Violet
Pair	White
Twisted	Gray
Pair	White
Twisted	Brown
Pair	White



SEE TABLES 2 and 3 FOR PIN FUNCTIONS







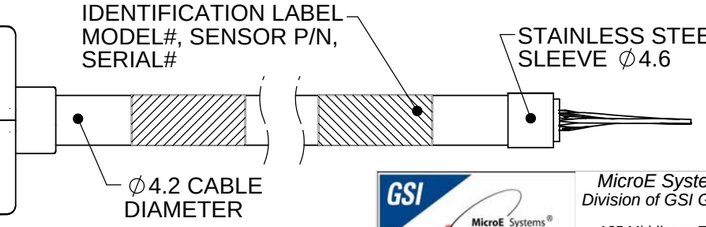


TABLE 2.

Mercury II 6000 15-Plug Quadrature Output	
Pin	***Function***
1	RL+
3	RL-
2	GND
7	5V
4	I-
12	I+
5	B-
13	B+
6	A-
14	A+
8	5V
9	GND
10	LL+
11	LL-
15	ALARM

TABLE 3.

Mercury II 6000 15-Plug Serial Output	
Pin	***Function***
1	nCS+
3	nCS-
2	GND
7	5V
4	DIAG_IN_OUT-
12	DIAG_IN_OUT+
5	SCLOCK_OUT-
13	SCLOCK_OUT+
6	SDATA_OUT-
14	SDATA_OUT+
8	5V
9	GND
10	SCLOCK_IN+
11	SCLOCK_IN-
15	ALARM

MicroE Systems
Division of GSI Group
125 Middlesex Tpk.
Bedford, MA 01730

DESCRIPTION:
INTERFACE, ENCODER, 20um
ROTARY SCALE w/INDEX and HUB,
MERCURY II 6000 VACUUM SENSOR

SIZE	DWG. NO.	REV.
B	ID-00373	2

SCALE: | CAD FILE: | 3rd ANGLE PROJECTION | SHEET 2 OF 2