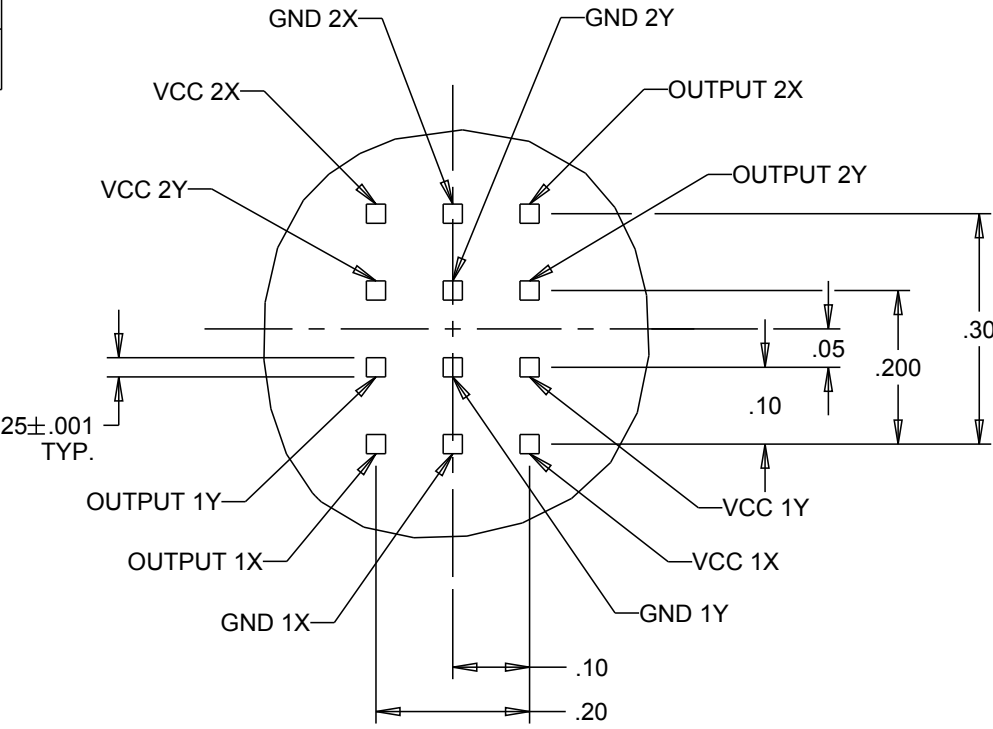
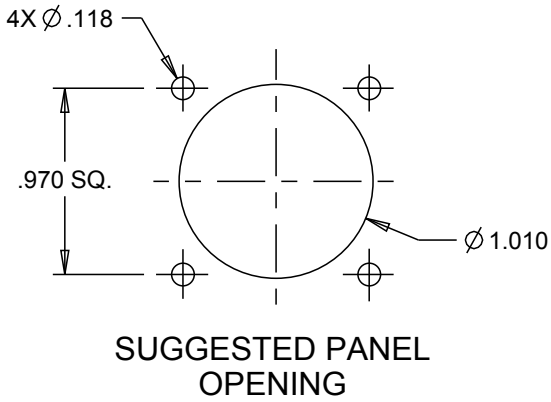


NOTES:

1. DRAWING TO BE INTERPRETED IN ACCORDANCE WITH THE CURRENT REVISION OF ASME Y14.5.
2. THIS PART/PRODUCT IS TO BE MANUFACTURED WITH THE LATEST APPLICABLE REGULATIONS OF EC DIRECTIVES FOR THE RESTRICTION OF THE USE OF HAZARDOUS SUBSTANCES IN ELECTRICAL AND ELECTRONIC EQUIPMENT (ROHS), WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) AND REGISTRATION, EVALUATION, AUTHORIZATION AND RESTRICTION OF CHEMICALS (REACH).
3. OUTPUTS ARE FROM THE CENTER TO THE FULL TRAVEL POSITION IN EACH DIRECTION. OPTIONS "AA", "BB", "CC", "DD", "EE", "FF" PROVIDE INCREASED VOLTAGE IN +X, +Y; AND DECREASING VOLTAGE IN -X, -Y DIRECTION FROM ONE OUTPUT PER AXIS. OPTIONS "GG" AND "HH" PROVIDE INCREASING VOLTAGES. IN ALL DIRECTIONS (+X, +Y, -X, -Y) FROM 2 OUTPUTS PER AXIS.
4. OPTIONS "BB" AND "EE" PROVIDE REDUNDANT OUTPUT 2 WHICH DUPLICATES OUTPUT 1. OPTIONS "CC" AND "FF" PROVIDE REDUNDANT OUTPUT 2 WHICH IS INVERSE OF OUTPUT 1.
5. SEE PAGE 4 FOR ALTERNATE BUTTON DESIGN. ONLY BUTTON STYLE "2", "5", AND "6" ARE OFFERED WITH A WATERTIGHT PANEL SEAL.
6. MARKING TO INCLUDE: "OTTO" P/N & DATE CODE "YYWW".

PRODUCT SPECIFICATIONS				
ELECTRICAL:				
RATED AT V _{cc} = 5V @ 20° C LOAD = 1ma (4.7KΩ)	UNITS	MIN	TYP	MAX
SUPPLY VOLTAGE, V _{cc}	VDC	4.50	5.00	5.50
OUTPUT VOLTAGE TOLERANCE AT CENTER (SEE APPROPRIATE GRAPH FOR OUTPUT VALUES)	VDC @5V V _{cc}	-.25	NA	+.25
OUTPUT VOLTAGE TOLERANCE FULL TRAVEL (SEE APPROPRIATE GRAPH FOR OUTPUT VALUES)	VDC @5V V _{cc}	-.25	NA	+.25
SUPPLY CURRENT PER SENSOR B=0, V _{cc} =5V, I _{out} =0	mA	NA	NA	10.00
OUTPUT SOURCE CURRENT LIMIT B=-X°, Vo=0	mA	-1.00	NA	1.00
MECHANICAL:				
MECHANICAL LIFE ALL DIRECTIONS	1,000,000 CYCLES			
TRAVEL ANGLE	DEGREES	23	25	27
OPERATING FORCE (W/BOOT) AT TOP OF BUTTON, @ 20° C	OZ	NA	16	20
MAX. ALLOWABLE VERTICAL FORCE ON BUTTON	LBS	NA	NA	25
MAX. ALLOWABLE RADIAL FORCE ON BUTTON	LBS	NA	NA	25
MAX. ALLOWABLE TORQUE ON BUTTON ABOUT SHAFT AXIS	IN-LBS	NA	NA	5.5
ENVIRONMENTAL:				
OPERATING TEMPERATURE	°C	-40	20	85
ELECTRONICS SEAL INTEGRITY	WATERTIGHT PER IP68S, 1 METER			
EMI/RFI WITHSTAND	PER SAE J1113 CONTACT FACTORY FOR DETAILS			
MATERIAL:				
BOOT	ELASTOMER, BLACK			
BUTTON	THERMOPLASTIC, BLACK			
CASE	THERMOPLASTIC, BLACK			
FLANGE	THERMOPLASTIC, BLACK			
HARDWARE	4X ITW FASTEX PANEL FASTENER P/N 36030002, OR EQUIVALENT			



DETAIL A
SCALE 4:1
ALL PINS NOT PRESENT IN ALL CONFIGURATIONS



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES.
TOLERANCES:
.XX ±.03
.XXX ±.010
ANGLES ±2°
DO NOT SCALE

OTTO
CARPENTERSVILLE, ILLINOIS USA

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DESCRIPTION

HTL4, LINEAR HALL EFFECT
4-WAY TOGGLE

DRWN. JLW
CHKD. MRM
APPD. AH

SIZE
C

FSCM NO
21649

DRAWING NO.
HTL4-_____

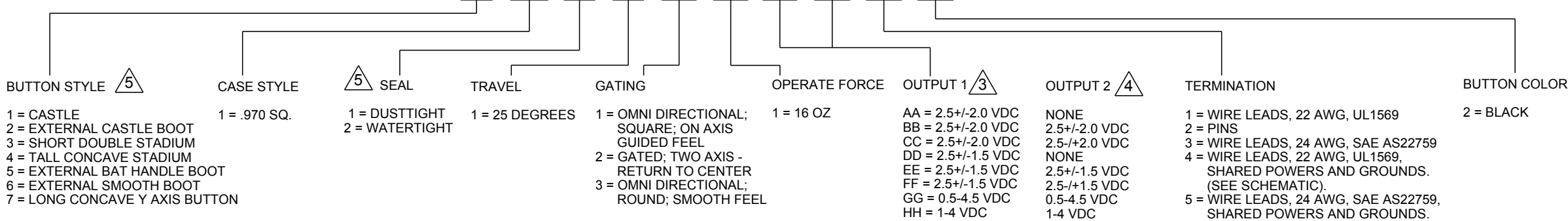
REV.
W

THIRD ANGLE
PROJECTION

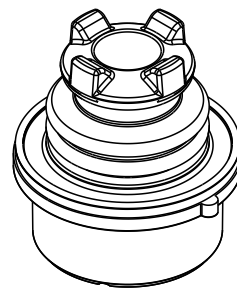
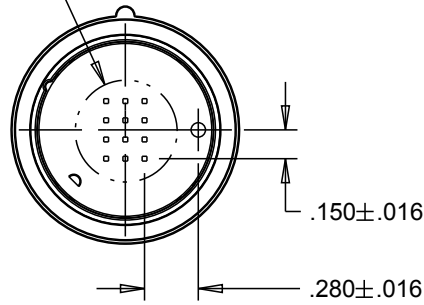
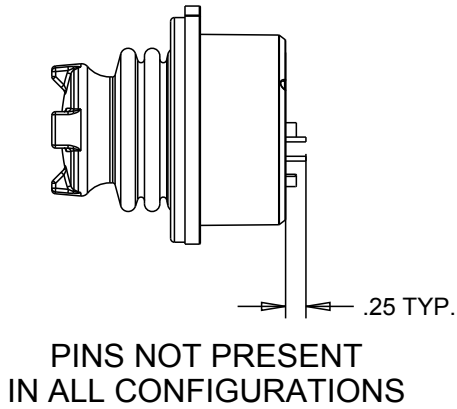
Scale 1:1

Sheet 1 OF 5

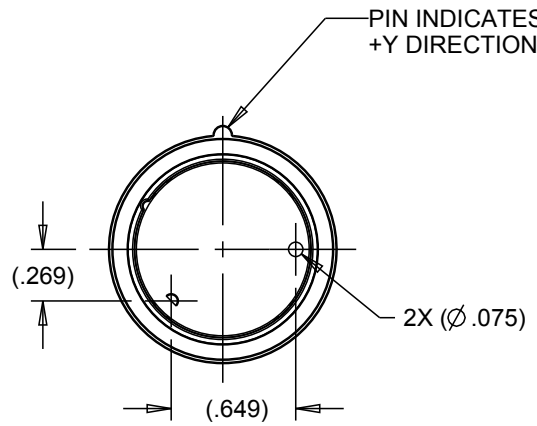
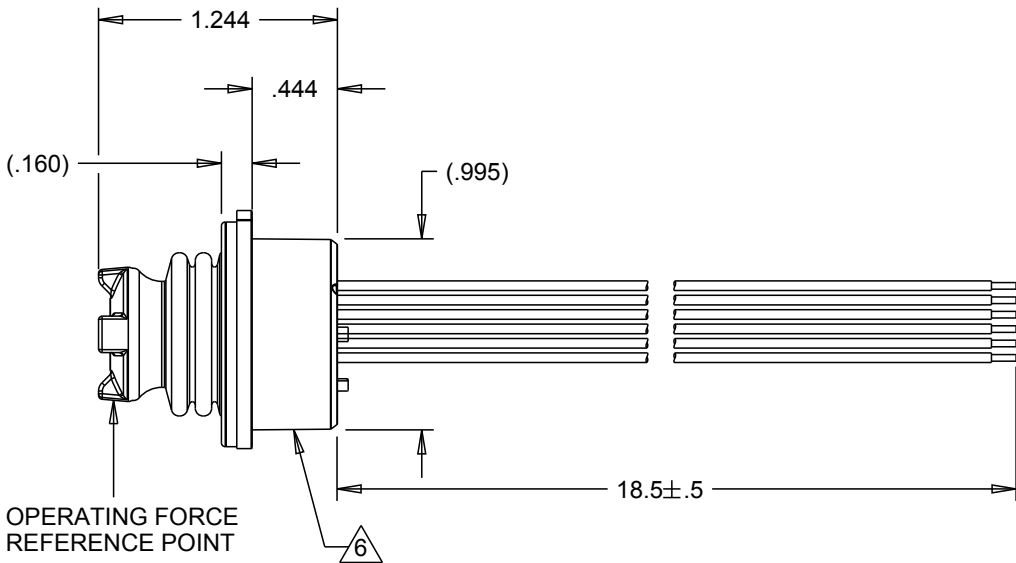
HTL4-



SEE DETAIL A



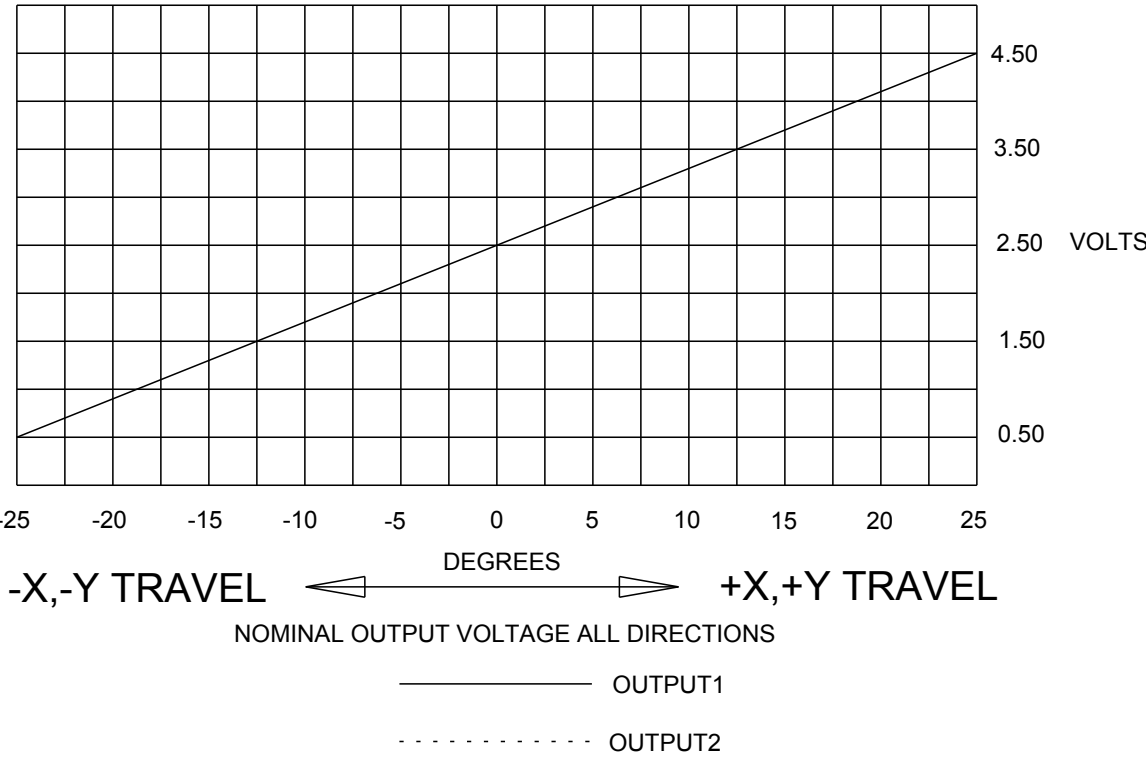
SCALE 1:1



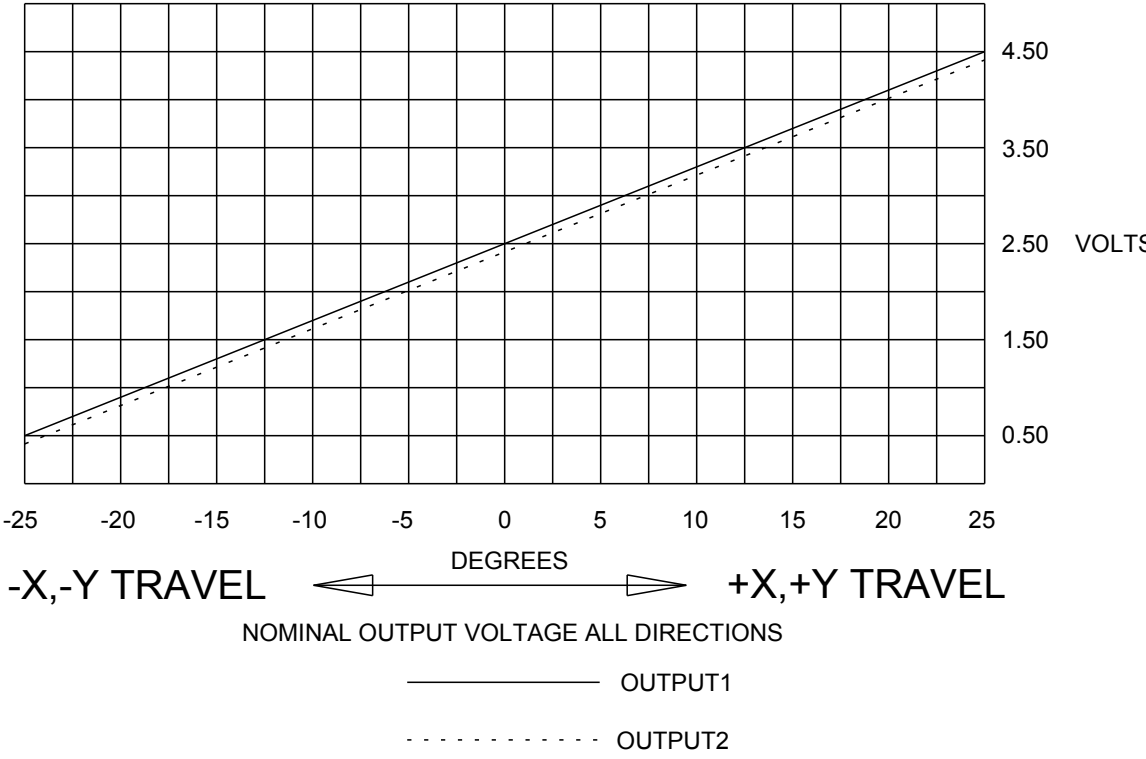
PIN INDICATES
+Y DIRECTION

SHIPPED UNASSEMBLED

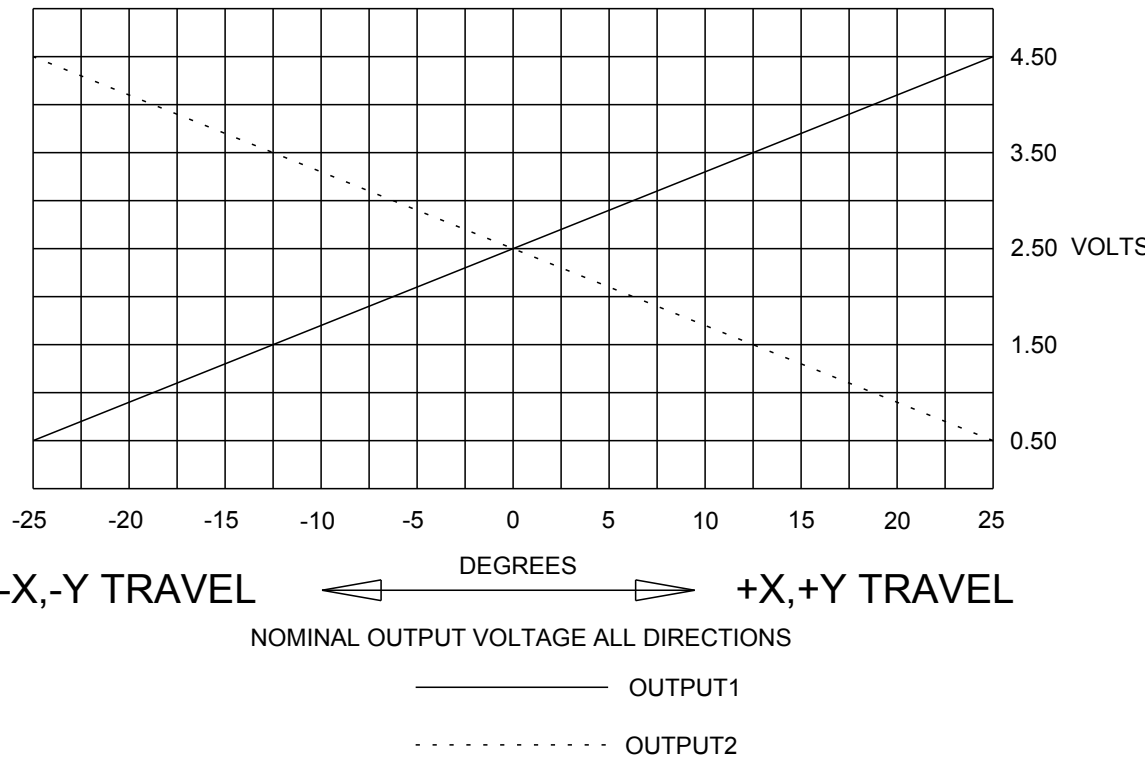
OPTION AA



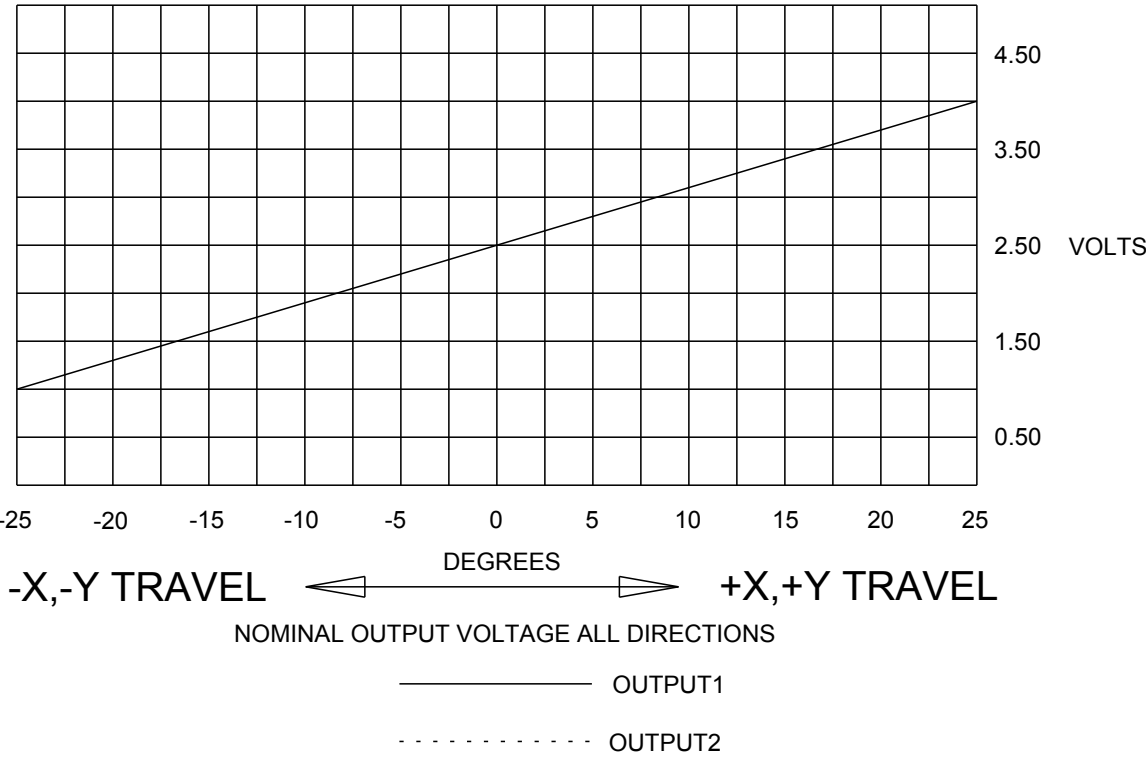
OPTION BB



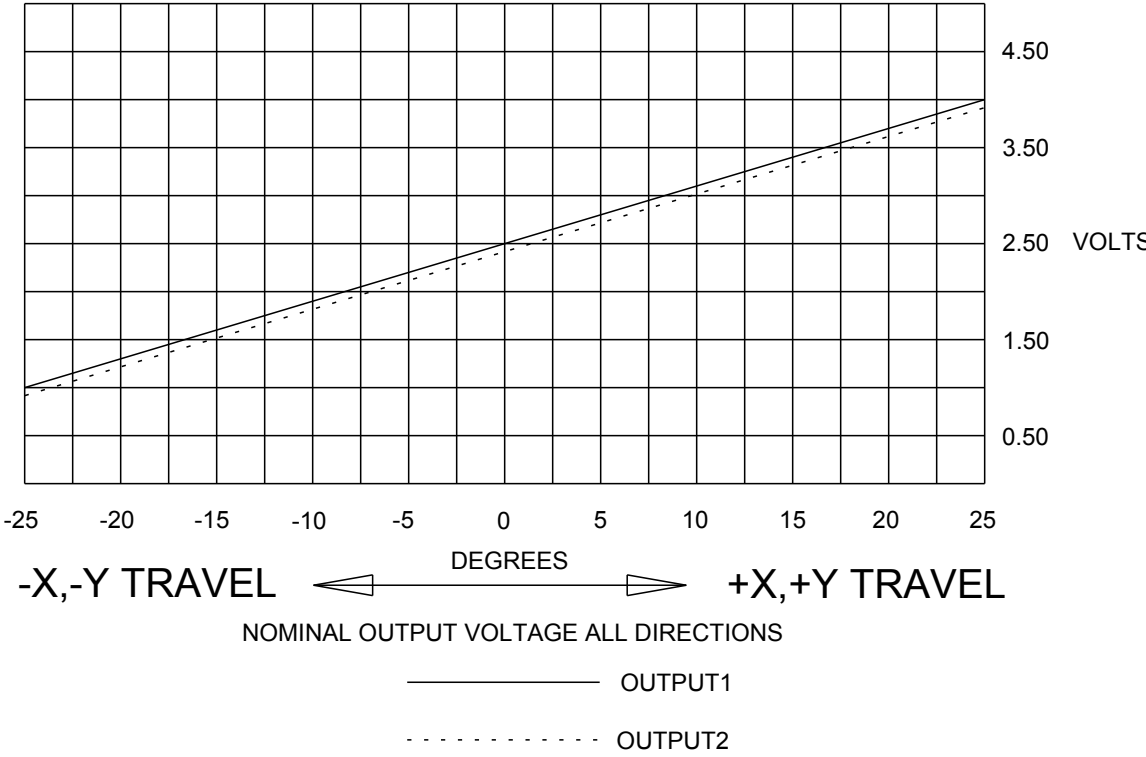
OPTION CC



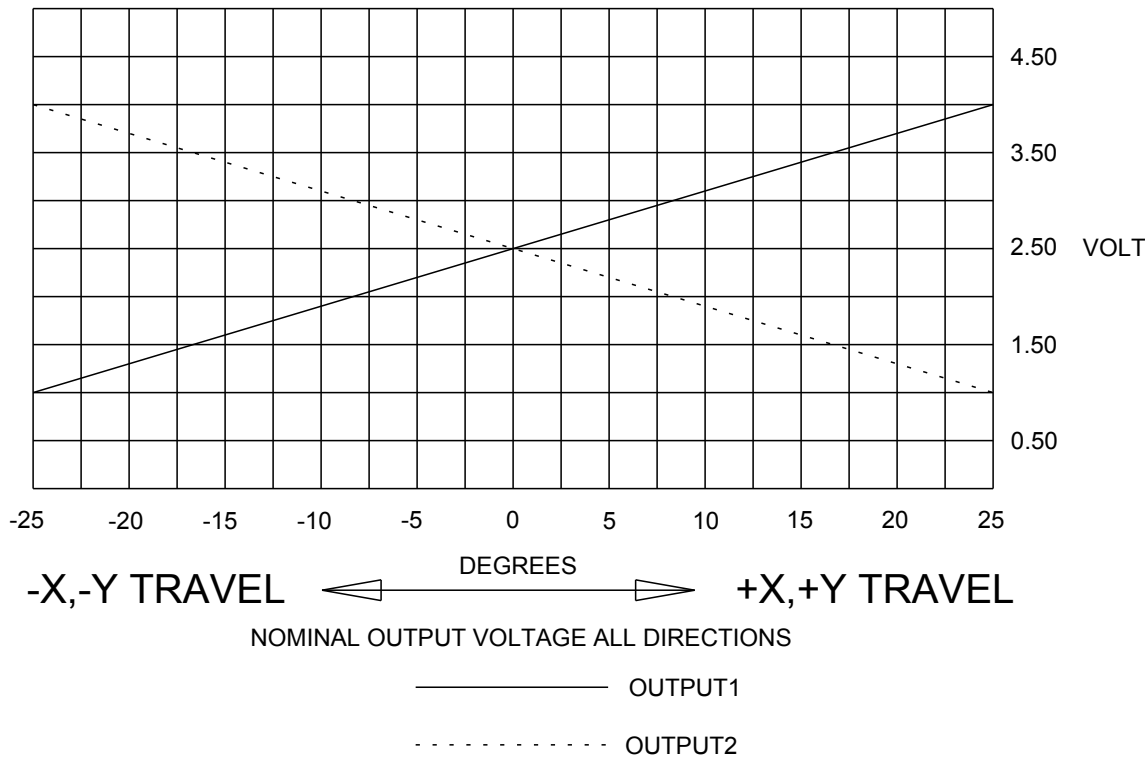
OPTION DD



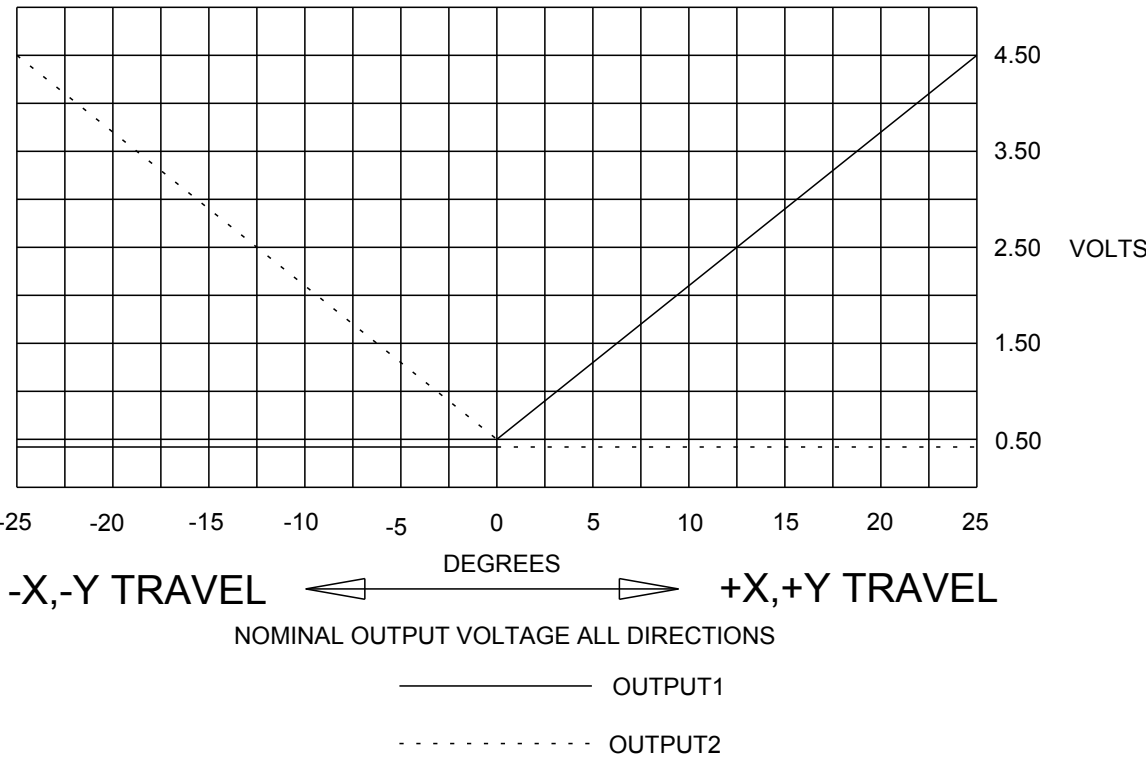
OPTION EE



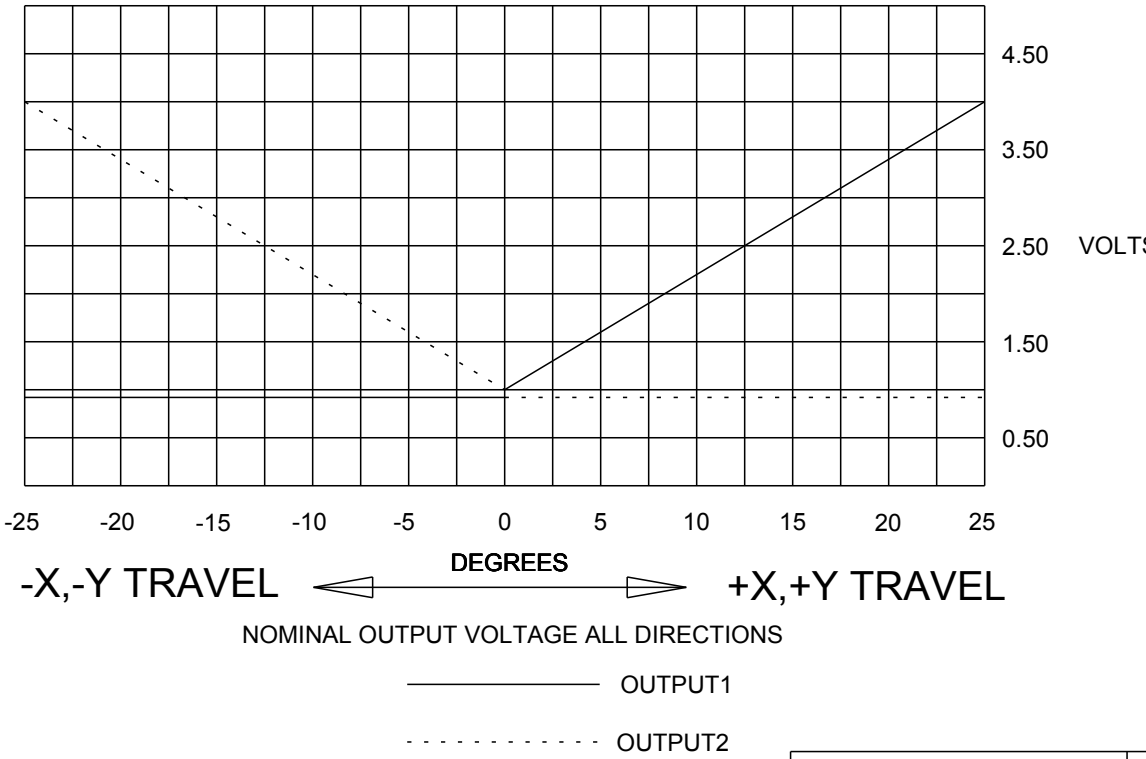
OPTION FF



OPTION GG



OPTION HH



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE AS LISTED.
MUST BE FREE FROM BURRS
AND SHARP EDGES

TOLERANCES
.XX ±.03
.XXX ±.010
ANGLES ±2°
DO NOT SCALE DRAWING

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DRWN. JLW
CHKD. MRM
APPD. AH
WT.

SIZE
C

FSCM NO
21649

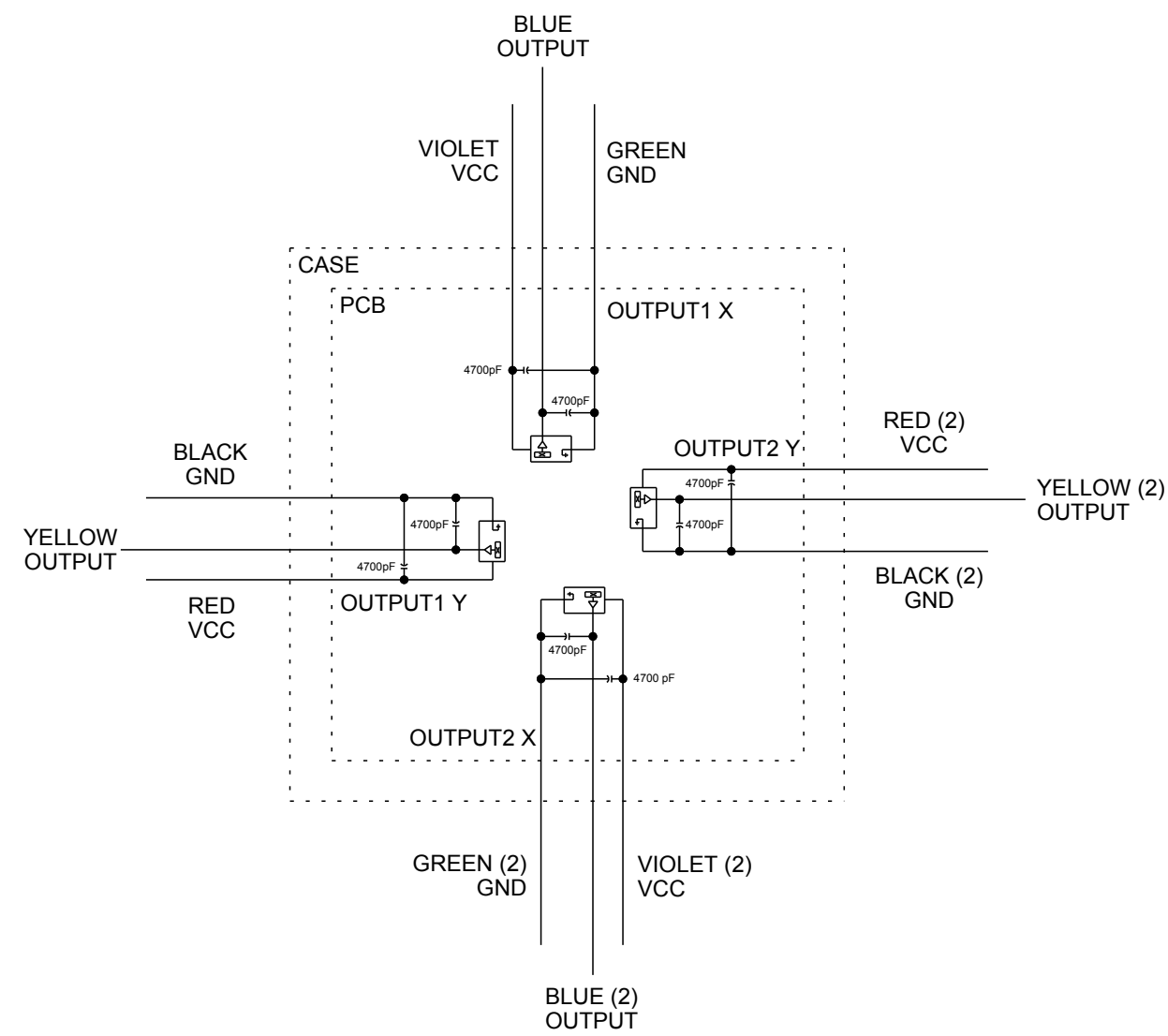
DRAWING NO.
HTL4-_____

REV.
W

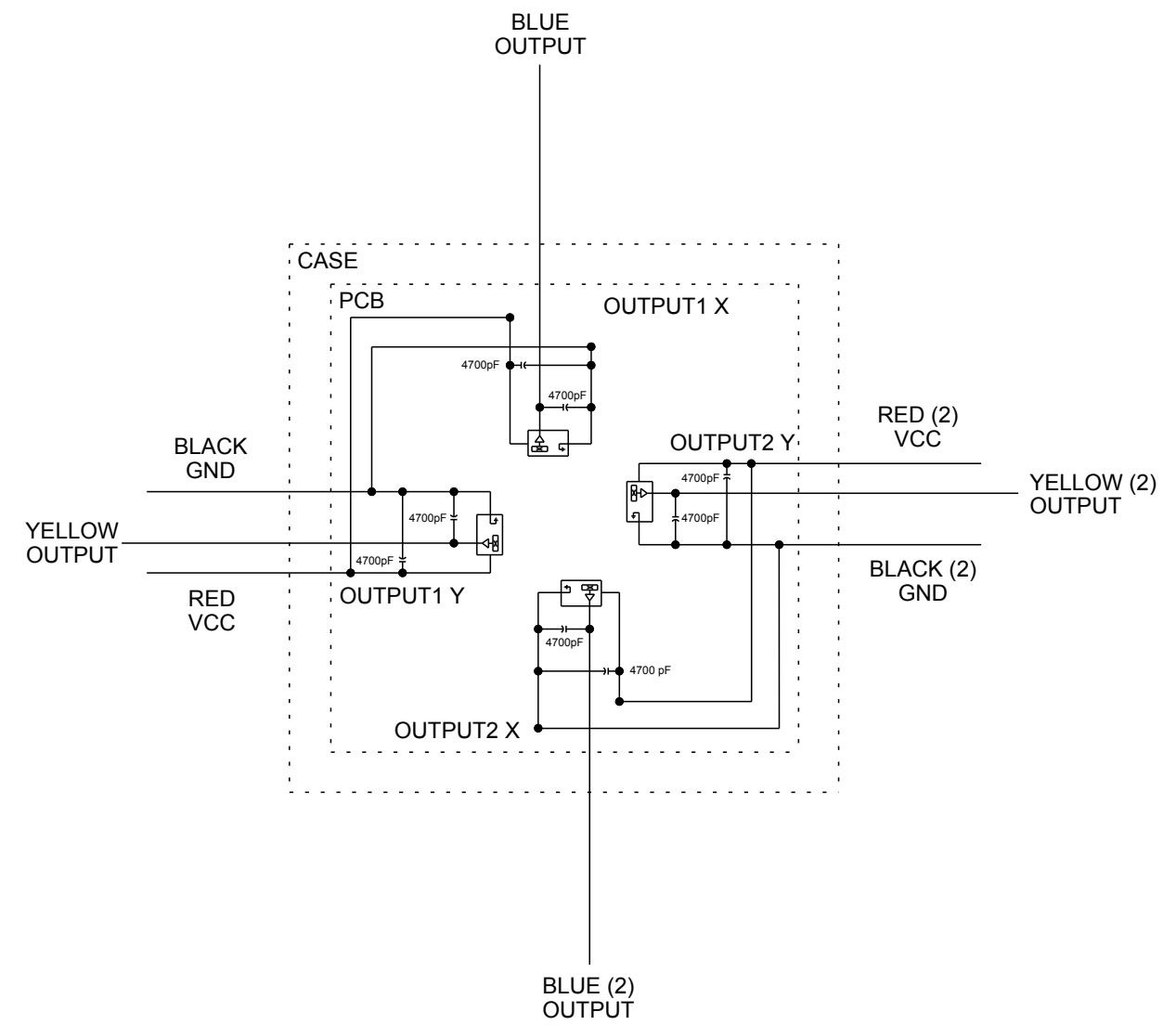
THIRD ANGLE
PROJECTION

Scale 1:1

Sheet 2 OF 5



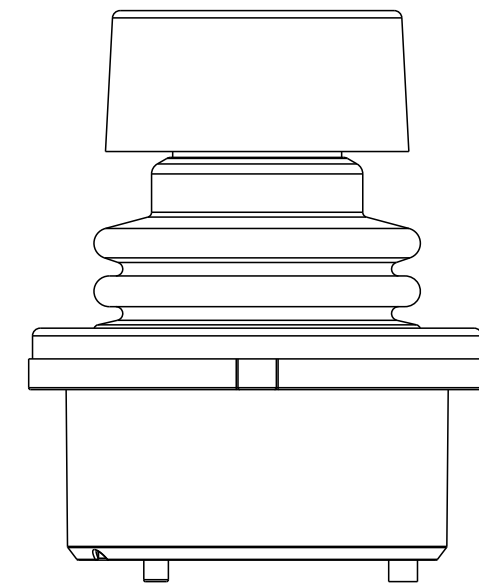
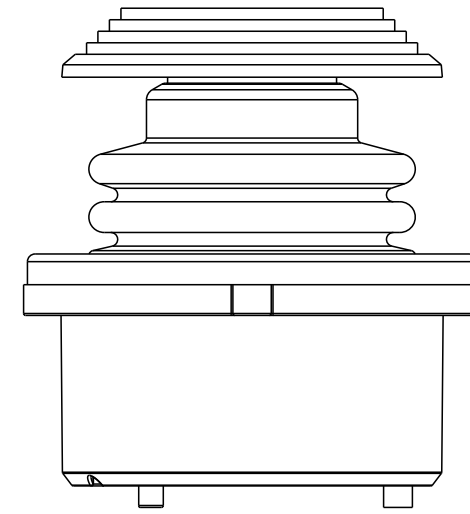
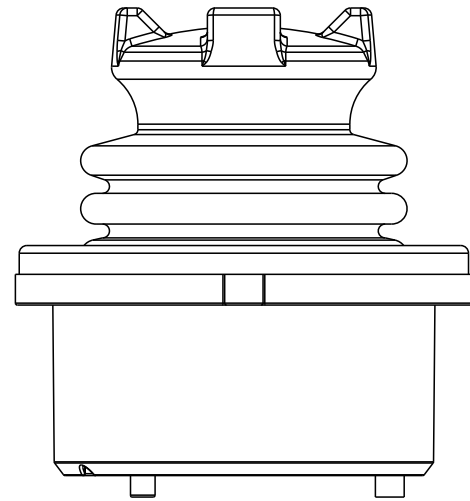
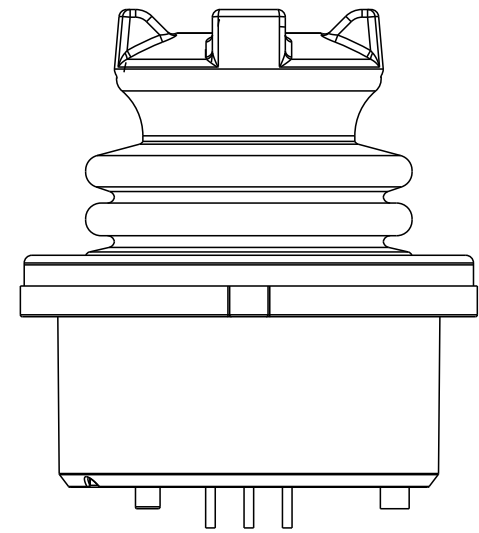
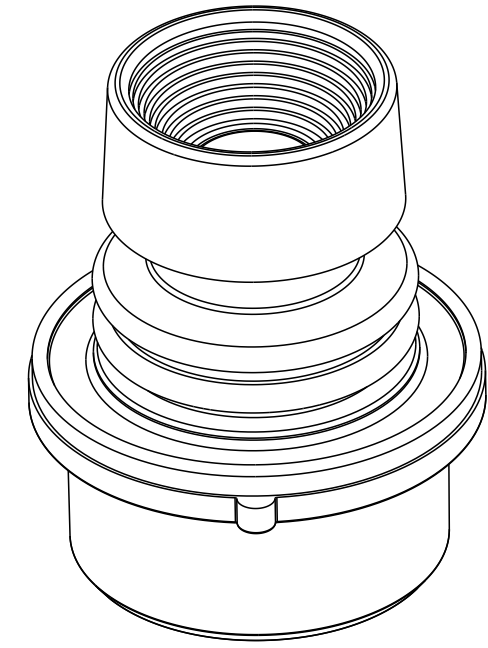
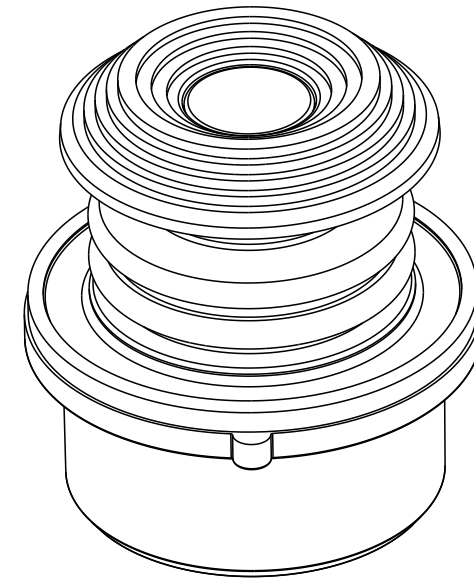
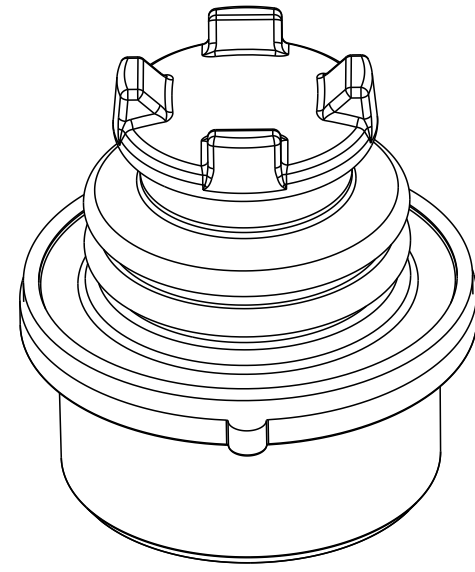
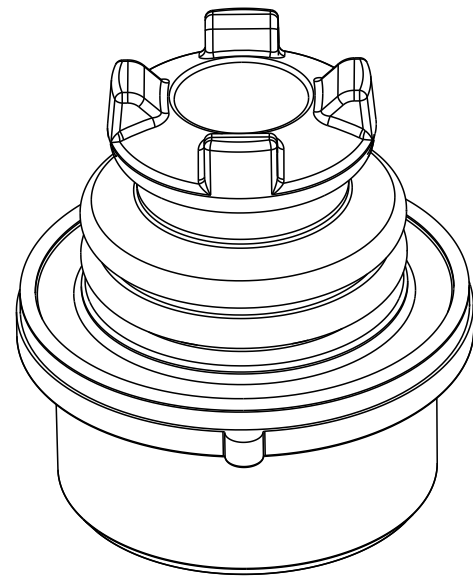
TERMINATION STYLE 1, 2, AND 3



TERMINATION STYLE 4 AND 5

ALL WIRES NOT PRESENT
IN ALL CONFIGURATIONS

OUTPUT2 NOT PRESENT
IN ALL CONFIGURATIONS



BUTTON STYLE 1
(CASTLE)

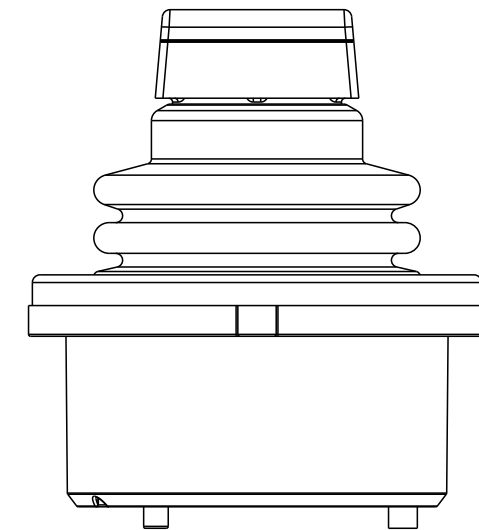
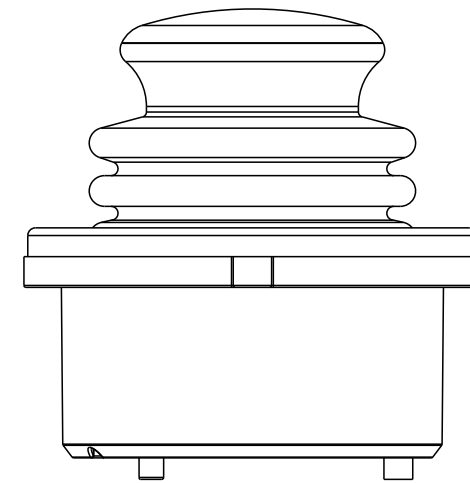
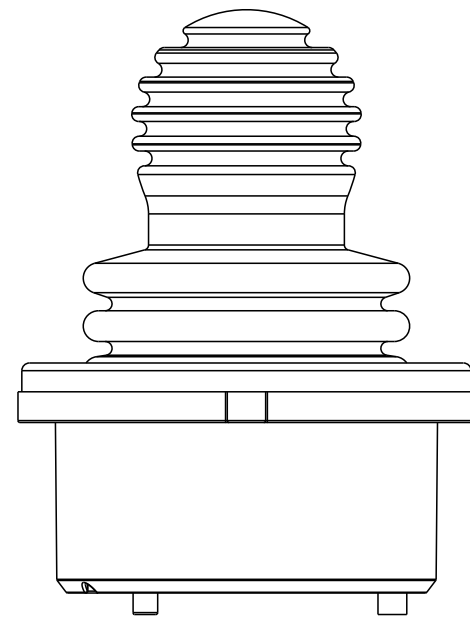
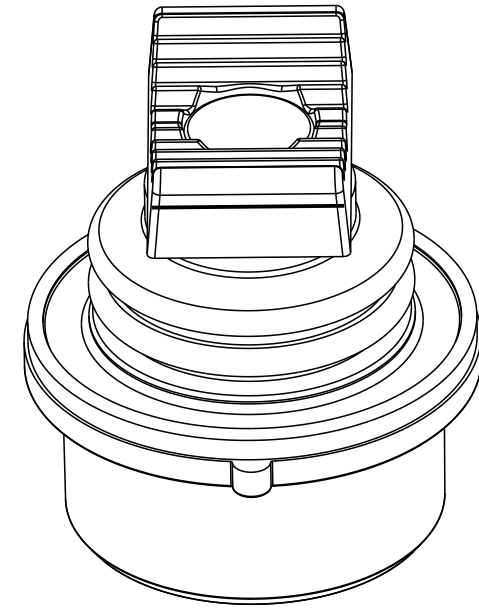
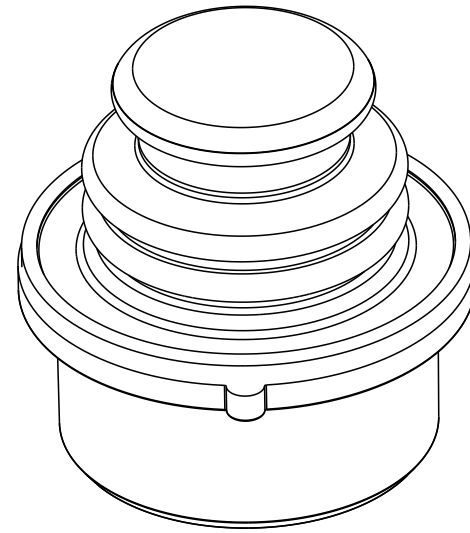
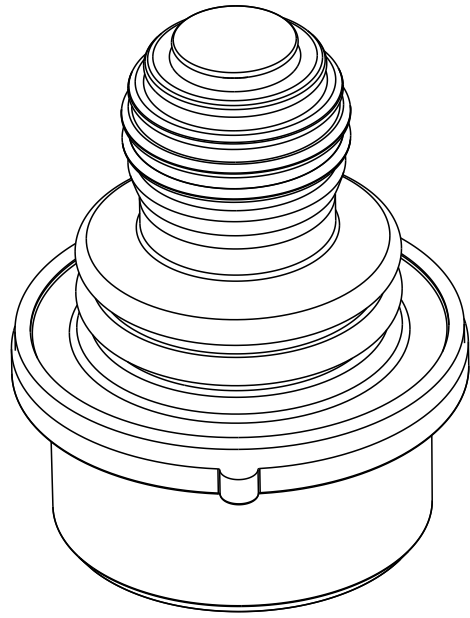
BUTTON STYLE 2
(EXTERNAL CASTLE BOOT)

BUTTON STYLE 3
(SHORT DOUBLE STADIUM)

BUTTON STYLE 4
(TALL CONCAVE STADIUM)

BUTTON STYLE CONFIGURATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE AS LISTED. MUST BE FREE FROM BURRS AND SHARP EDGES	TOLERANCES		THIS DOCUMENT IS THE CONFIDENTIAL PROPERTY OF OTTO ENGINEERING, INC.. IT IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTERESTS OF OTTO ENGINEERING, INC..	DRWN. JLW	SIZE	FSCM NO	DRAWING NO.	REV.
	.XX	±.03		CHKD. DCF	C	21649	HTL4-	W
	.XXX	±.010		APPD. AH				
	ANGLES ±2°			WT.	THIRD ANGLE PROJECTION	Scale 1:1	Sheet 4 OF 5	



BUTTON STYLE 5
(EXTERNAL BAT
HANDLE BOOT)

BUTTON STYLE 6
(EXTERNAL SMOOTH BOOT)

BUTTON STYLE 7
(LONG CONCAVE Y AXIS BUTTON)

BUTTON STYLE CONFIGURATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE AS LISTED. MUST BE FREE FROM BURRS AND SHARP EDGES	TOLERANCES		THIS DOCUMENT IS THE CONFIDENTIAL PROPERTY OF OTTO ENGINEERING, INC.. IT IS NOT TO BE USED IN ANY WAY DETRIMENTAL TO THE INTERESTS OF OTTO ENGINEERING, INC..	DRWN. JLW	SIZE	FSCM NO	DRAWING NO.	REV.
	.XX	±.03		CHKD. DCF	C	21649	HTL4-	W
	.XXX	±.010		APPD. AH				
	ANGLES	±2°		WT.	THIRD ANGLE PROJECTION	Scale 1:1	Sheet 5 OF 5	

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[HTL4-112131CC12](#) [HTL4-112131AA12](#) [HTL4-212111GG12](#) [HTL4-512131GG22](#) [HTL4-612111BB12](#) [HTL4-111111BB12](#) [HTL4-612131BB52](#) [HTL4-512131CC22](#) [HTL4-612111FF12](#) [HTL4-112111EE12](#) [HTL4-312121DD22](#) [HTL4-212111AA22](#) [HTL4-512111DD12](#) [HTL4-512111GG12](#) [HTL4-412111AA12](#) [HTL4-511111CC12](#) [HTL4-111121GG12](#) [HTL4-312111GG22](#) [HTL4-212121BB12](#) [HTL4-212131AA22](#) [HTL4-311121HH12](#) [HTL4-612131AA22](#) [HTL4-611121CC12](#) [HTL4-312121CC22](#) [HTL4-112121CC12](#) [HTL4-312111EE12](#) [HTL4-411121AA12](#) [HTL4-512131CC12](#) [HTL4-111121CC22](#) [HTL4-611111CC12](#) [HTL4-111111DD22](#) [HTL4-711111AA12](#) [HTL4-312121HH12](#) [HTL4-311121GG12](#) [HTL4-512131AA12](#) [HTL4-612121BB12](#) [HTL4-212121AA22](#) [HTL4-112111GG22](#) [HTL4-411111GG12](#) [HTL4-211121HH12](#) [HTL4-611111AA22](#) [HTL4-612111AA12](#) [HTL4-512111BB12](#) [HTL4-512131BB22](#) [HTL4-312111CC12](#) [HTL4-312121GG12](#) [HTL4-311111AA12](#) [HTL4-111121AA12](#) [HTL4-212121AA12](#) [HTL4-612131BB12](#) [HTL4-312111DD12](#) [HTL4-511131DD52](#) [HTL4-311111CC12](#) [HTL4-111111EE12](#) [HTL4-312111FF12](#) [HTL4-512111AA22](#) [HTL4-612111GG12](#) [HTL4-512121AA12](#) [HTL4-111111CC12](#) [HTL4-612131AA52](#) [HTL4-612111AA22](#) [HTL4-612131AA12](#) [HTL4-612121DD12](#) [HTL4-311111GG12](#) [HTL4-312111AA12](#) [HTL4-512111EE22](#) [HTL4-512111CC12](#) [HTL4-111111GG22](#) [HTL4-311111DD12](#) [HTL4-612121CC12](#) [HTL4-111121CC12](#) [HTL4-512131GG12](#) [HTL4-512121AA22](#) [HTL4-111111DD12](#) [HTL4-212131CC12](#) [HTL4-312121FF12](#) [HTL4-312111CC22](#) [HTL4-311111AA22](#) [HTL4-611111AA12](#) [HTL4-312131AA12](#) [HTL4-511111AA12](#) [HTL4-212131BB12](#) [HTL4-212111AA42](#) [HTL4-612111CC22](#) [HTL4-511121AA12](#) [HTL4-512131BB12](#) [HTL4-112121BB12](#) [HTL4-512111AA12](#) [HTL4-512131AA22](#) [HTL4-111111GG12](#) [HTL4-612131GG12](#) [HTL4-312111BB12](#) [HTL4-612131DD12](#) [HTL4-512131DD12](#) [HTL4-111111AA12](#) [HTL4-511111BB12](#) [HTL4-512111EE12](#) [HTL4-212131AA12](#) [HTL4-212111AA12](#) [HTL4-312111GG12](#)