HALL EFFECT TRANSDUCER

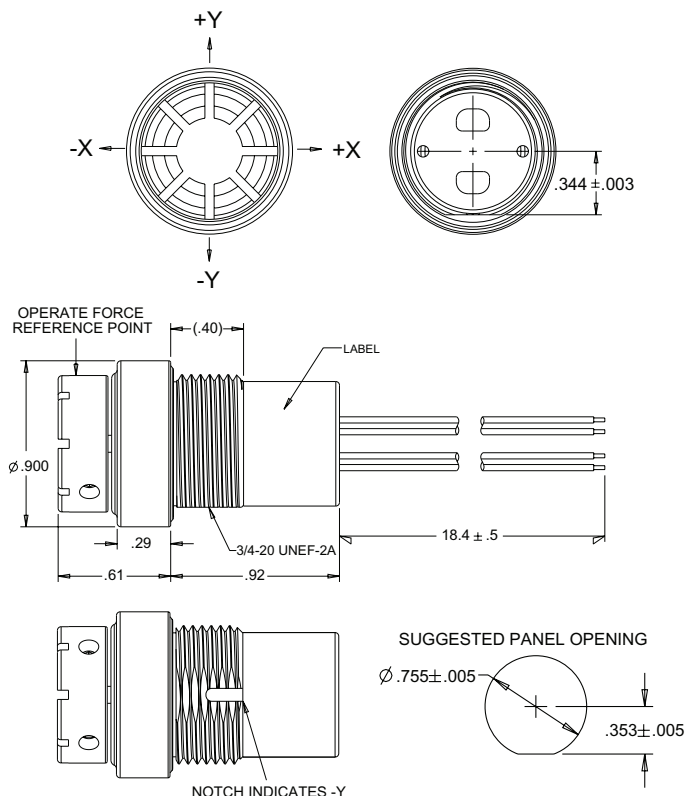TRANSDUCERS

MINI JOYSTICK

The J4 Hall effect transducer, like a strain gauge based transducer, converts an input force to a linear output voltage. However, the J4 is a cost effective alternative to a strain gauge type transducer. The J4 construction is rugged enough for the most demanding applications.

The J4's shorter travel offers the benefit of minimal movement required for analog voltage output change. In addition, the J4 offers the benefit of a higher output voltage than a traditional strain gauge based transducer with the same input voltage.

The J4 can be used for applications such as cursor control, target acquisition or any place precise input control is required. The J4's short behind panel depth means it can be used in an OTTO grip or can be panel mounted.

J4-100001
Transducer

Features:

- **A cost effective alternative to strain gauge based technology**
- **Mini joystick function**
- **5V DC input**
- **Proven Hall effect technology**
- **Magnetic shielding in case offers excellent external EMI protection**
- **Rugged construction for demanding applications**

Standard Characteristics/Ratings:

ELECTRICAL RATINGS:

Rated at Vcc = 5V, Load = 1mA (4.7KΩ)				
Electrical	Units	Min	Typ	Max
Supply Voltage	VDC	4.50	5.00	5.50
Output Voltage, +Y,-Y,+X,-X 0° Deflection:	VDC @ 5V Vcc	2.40	2.50	2.60
Output at Full Travel -X,-Y Direction:	VDC @ 5V Vcc	1.35	1.50	1.65
Output at Full Travel +X,+Y Direction:	VDC @ 5V Vcc	3.35	3.50	3.65
Null Temperature Coefficient: 25°C to -20°C	+/- .005V per degree C max			
Null Temperature Coefficient: 25°C to 71°C	+/- .001V per degree C max			
Supply Current B=0, Vcc=5V, Io=0:	mA	N/A	20	24
Output Impedance:	kΩ	N/A	1.0	N/A

MECHANICAL RATINGS:

Mechanical Life All Directions	250,000 cycles			
Mechanical	Units	Min	Typ	Max
Operating Force (w/ Boot) at Top of Button @ 20° C:	LBS	N/A	3.0	3.1
Max Allowable Vertical Force on Button:	LBS	N/A	N/A	10
Max Allowable Radial Force on Top of Knob:	LBS	N/A	N/A	5

ENVIRONMENTAL:

Operating Temperature:	°C	-20	20	71
Electronics Enclosure Design:	ISO 20653, Dusttight and watertight per IP68S			
Drop:	1 meter max to concrete			
EMI Withstand:	Per ISO 11452			
RFI Withstand:	Per ISO 11452-8 15Hz-100kHz			
DC Magnetic Field Withstand:	3000 A/m per ISO 11452-8			

MATERIALS:

Button:	Thermoplastic, black
Case:	Black anodized aluminum
Boot:	Silicon rubber, black
Wires:	24 AWG, NEMA HP3, Type E
Mounting Hardware:	Hex nut (.13 thick) and lockwasher

+Y

-X +X

-Y

.344 ±.003

OPERATE FORCE
REFERENCE POINT

(.40)

LABEL

Ø.900

.29

3/4-20 UNEF-2A

18.4 ± .5

.61 .92

SUGGESTED PANEL OPENING

Ø .755±.005

.353±.005

NOTCH INDICATES -Y

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