

HE1 Series Specifications

| MECHANICAL (X & Y AXES) | |
|-------------------------|----------------------------|
| ANGLE OF MOVEMENT | 40° (20° EACH DIRECTION) |
| EXPECTED CYCLE LIFE | 5 MILLION |
| CENTERING | SPRING RETURN |
| MAX. VERTICAL LOAD | 75 lbf |
| MAX. HORIZONTAL LOAD | 30 lbf * |
| MATERIAL | GLASS/MINERAL FILLED NYLON |

* Measured 1.75" Above Panel Surface

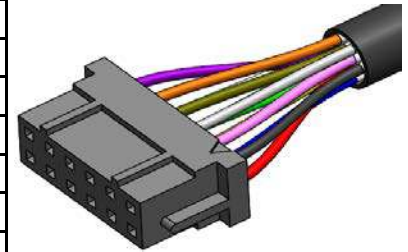
| MECHANICAL (Z AXIS) | |
|---------------------|--------------------------|
| ANGLE | 90° (45° EACH DIRECTION) |
| CENTERING | SPRING RETURN |
| MAX. APPLIED TORQUE | 14 lbfIn |

| ELECTRICAL | |
|--------------------------|----------------|
| SENSOR TYPE | HALL EFFECT |
| RESOLUTION | 12 BIT |
| SUPPLY VOLTAGE | 5VDC ± 0.01VDC |
| OUTPUT VOLTAGE | SEE OPTIONS |
| RETURN TO CENTER VOLTAGE | ± 50mV |
| OVERVOLTAGE MAX. | 20VDC |
| REVERSE POLARITY MAX. | -10VDC |

| ENVIRONMENTAL | |
|-------------------------|---|
| OPERATING TEMPERATURE | 0°F TO 140°F |
| STORAGE TEMPERATURE | -40°F TO 160°F |
| IP SEALING ABOVE FLANGE | UP TO IP67** |
| EMC IMMUNITY LEVEL | EN61000-4-3 *Compliance to 30A/m |
| EMC EMISSIONS LEVEL | EN61000-6-3 |
| ESD IMMUNITY LEVEL | EN61000-4-2 |
| VIBRATION TESTING | Per SAE J1455 Section 4.9 & MIL-STD810G 514.6 |
| MECHANICAL SHOCK | Per SAE J1455 Section 4.10 & MIL-STD-202G |

| HIROSE DF11-12DP-2DS(24) CONNECTOR (ANALOG) | | |
|---|------------|---------------|
| PIN # | WIRE COLOR | DESCRIPTION |
| 1 | BLACK | GROUND |
| 2 | RED | POWER (+5V) |
| 3 | PINK | N/A |
| 4 | BLUE | X AXIS SENSOR |
| 5 | GREY | N/A |
| 6 | YELLOW | Y AXIS SENSOR |
| 7 | BROWN | N/A |
| 8 | GREEN | Z AXIS SENSOR |
| 9 | ORANGE | BUTTON 1 |
| 10 | WHITE | BUTTON COMMON |
| 11 | VIOLET | BUTTON 2 |
| 12 | N/A | N/A |

| **HANDLE IP RATING | |
|--------------------|-----------|
| HANDLE OPTION | IP RATING |
| 20 | IP54 |
| 21 | IP50 |
| 22 | IP50 |
| 23 | IP50 |
| 24 | IP67 |
| 25 | IP67 |
| 30 | IP54 |
| 31 | IP50 |
| 32 | IP50 |
| 40 | IP54 |
| 41 | IP50 |
| 42 | IP50 |
| 50 | IP54 |
| 51 | IP50 |



10" CABLE PROVIDED,
ANALOG VERSION

*Extended Testing Levels

| HE1 ELECTRICAL SPECIFICATIONS (USB VERSION) | |
|---|---|
| RESOLUTION | 10 BIT |
| SUPPLY VOLTAGE | 5VDC via USB CABLE |
| SYSTEM SUPPORT | WINDOWS (ALL), OSX, LINUX |
| SUPPORTED PROTOCOLS | USB HID 1.1 GAME CONTROLLER STANDARD DIRECTX HID DRIVERS JOYSTICK: 2 OR 3 HID AXES PUSHBUTTONS: UP TO 2 HID BUTTON |
| CABLE | USB MALE TYPE A to RIGHT ANGLE MINI B 5FT (60") LENGTH (MINI B TO JOYSTICK) |

| CURSOR CONTROL OUTPUT OPTION: | |
|---|--|
| <p>The <i>Cursor Control</i> output option converts the analog joystick output into a USB cursor control device. This is achieved by the joystick's microprocessor converting the absolute position of the joystick into a cursor velocity or mouse position.</p> | |
| CABLE | USB MALE TYPE A to RIGHT ANGLE MINI B 5FT (60") LENGTH (MINI B TO JOYSTICK) |