Position Sensors

2-WIRE POSITION TRANSMITTER

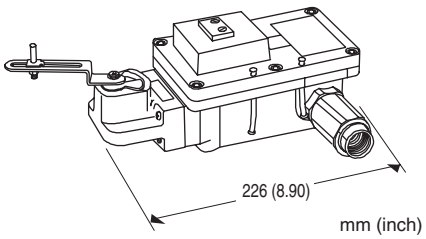
(flameproof, linear motion type)

Functions & Features

- Differential transformer incorporated
- Light weight and compact design
- High resolution
- Zero & Span adjustable without opening the cover
- Direct or reverse action selectable

Typical Applications

• Detecting stroke positions of a valve actuator or moving positions of other mechanisms and transmits standard 4 to 20 mA DC proportional to the position



MODEL: VOS–E–[1][2][3][4]]5]

ORDERING INFORMATION

Code number: VOS-E-[1][2][3][4][5]
Specify a code from below for each [1] through [5].
(e.g. VOS-E-1321/C/R1)

[1] ACTION

1: Direct
(output increases with counterclockwise lever operation)
2: Reverse
(output decreases with counterclockwise lever operation)
Note: Counterclockwise if seen from the upper (cover) side.

[2] WIRING CONDUIT

3: G 1/2 (located at the right side)
4: G 1/2 (located at the left side)
5: 1/2 NPT fitting (located at the right side)
6: 1/2 NPT fitting (located at the left side)

[3] LEVER

1: Stroke 10 – 30 mm (0.39" – 1.18")
2: Stroke 30 – 100 mm (1.18" – 3.94")
3: Stroke 25 – 60 mm (0.98" – 2.36")

[4] LEVER POSITION

1: Upper side
2: Lower side

[5] OPTIONS (multiple selections)

Clamp Set
blank: Without
/C: With Clamp set
Applicable cable dia.
blank: 6 < dia. ≤ 8
/R1: 8 < dia. ≤ 10
/R2: 10 < dia. ≤ 12

GENERAL SPECIFICATIONS

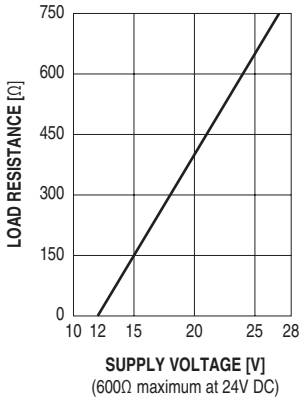
Degree of protection: IP55
Action: Direct or reverse; field selectable by change of the jumper pins' positions
Wiring conduit: G 1/2 or 1/2 NPT female
Cable gland: Flameproof packing (direct lead)
Connection: M3.5 screw terminals (torque 0.8 N·m)
Material
Housing: Cast aluminium
Position sensor: PBT (30 % fiber glass)
Painting color: Silver
Isolation: Output to metal housing
Zero adjustment: -5 – +5 % of effective rotating angle
Span adjustment: 60 – 105 % of effective rotating angle

INPUT SPECIFICATIONS

Input: Mechanical rotating angle
Effective rotating angle: -22.5 – +22.5° (45°)
Maximum rotating angle: -27.5°– + 27.5°(55°)
Torque: 0.324 N·m (0.239 ft·lbf)

OUTPUT SPECIFICATIONS

Output: 4 – 20 mA DC
Output impedance: 1 MΩ min.
Load resistance v.s. supply voltage:
Load Resistance (Ω) = (Supply Voltage (V) – 12 (V)) ÷ 0.02 (A)
(including leadwire resistance; refer to the graph)
Output characteristics: Proportional to the sine of rotating angle of the lever



INSTALLATION

Supply voltage: 15 – 28 V DC
Operating temperature: -5 to +50°C (23 to 122°F);
-5 to +40°C (23 to 104°F) for use in an explosive atmosphere
Vibration: ≤ 2 G (19.6 m/s^2)
Mounting position: All directions
Weight: Approx. 2.5 kg (5.51 lb)

PERFORMANCE in percentage of angle ±22.5 degrees

Linearity: 1.0 % within the linearity assured range
Hysterisis: 0.3 %
Temp. coefficient: ±0.03 %/°C (±0.02 %/°F)
Dielectric strength: 500 V AC @ 1 minute
(output to metal housing)

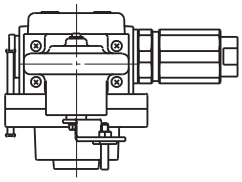
STANDARDS & APPROVALS

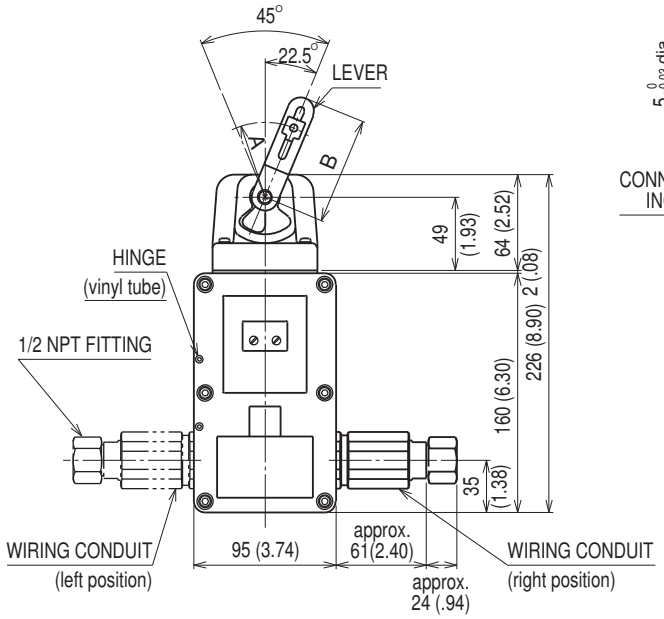
Safety approval:
TIIS: Flameproof
Ex d IIB T5

DIMENSIONS unit: mm (inch)

LEVER SIZE mm (inch)

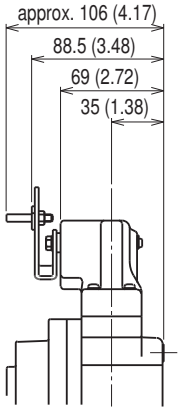
LEVER TYPE	A	B
Stroke 10 – 30 mm (.39" – 1.18")	R12 – R45	54 (2.13)
Stroke 30 – 100 mm (1.18" – 3.94")	R38 – R132	141 (5.55)
Stroke 25 – 60 mm (.98" – 2.36")	R30 – R82.5	91.5 (3.60)



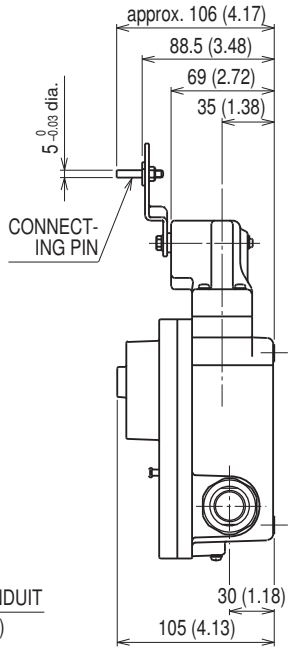


■ **Lever Attached to the Upper Side**

•Stroke 10 – 30 mm

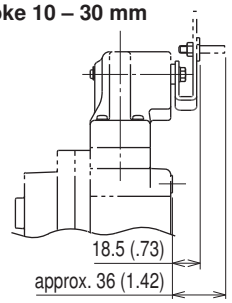


•Storke 30 – 100 mm or 25 – 60 mm

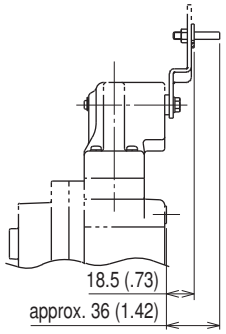


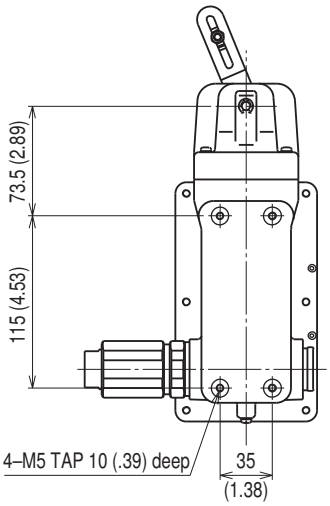
■ **Lever Attached to the Lower Side**

•Stroke 10 – 30 mm

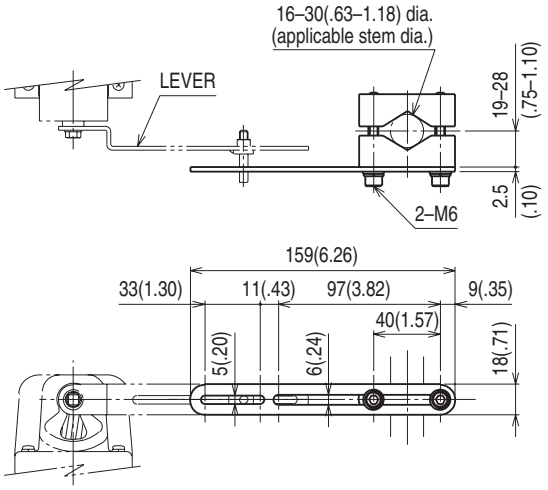


•Storke 30 – 100 mm or 25 – 60 mm

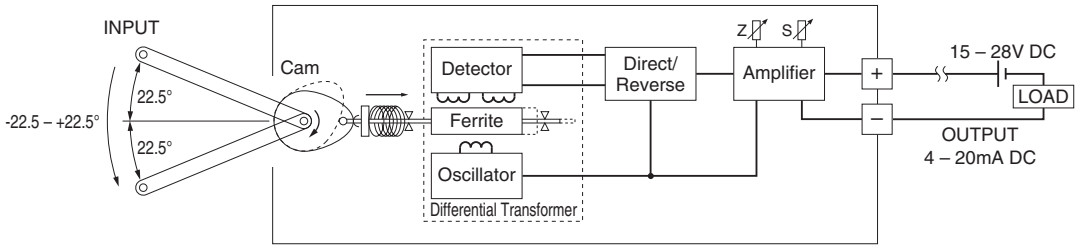




■ **CLAMP SET**



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



⚠ Specifications are subject to change without notice.