

Position Sensors

2-WIRE POSITION TRANSMITTER

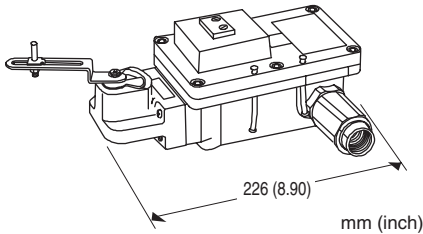
(flameproof, linear motion type)

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 of [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

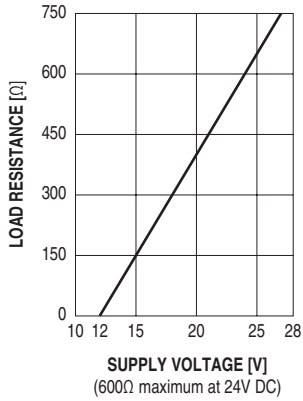
- Degree of protection:** IP55
- Action:** Direct or reverse; field selectable by change of the jumper pins' positions
- Wiring conduit:** G 1/2 or 1/2 NPT female
- Cable gland:** Flameproof packing (direct lead)
- Connection:** M3.5 screw terminals (torque 0.8 N·m)
- Material**
 - Housing:** Cast aluminium
 - 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/s²)

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

Hysteresis: 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:

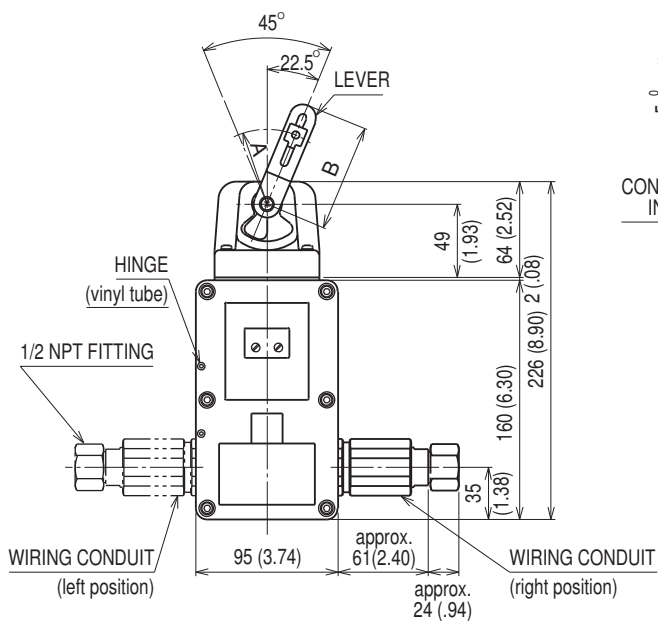
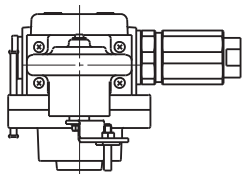
TIIS: Flameproof

Ex d IIB T5

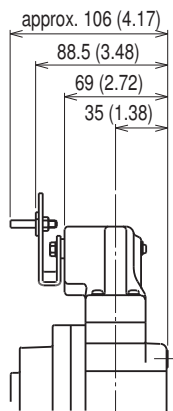
DIMENSIONS unit: mm (inch)

LEVER SIZE mm (inch)

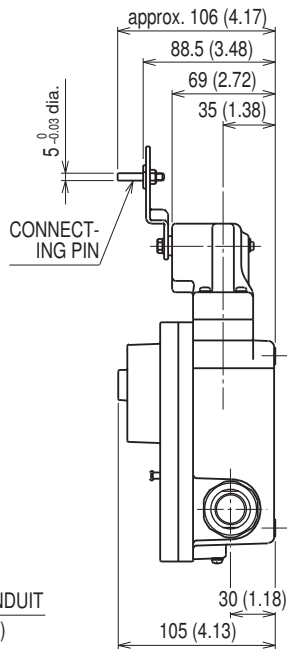
LEVER TYPE	A	B
Stroke 10 – 30 mm (.39" – 1.18")	R12 – R45	54 (2.13)
Stroke 30 – 100 mm (1.18" – 3.94")	R38 – R132	141 (5.55)
Stroke 25 – 60 mm (.98" – 2.36")	R30 – R82.5	91.5 (3.60)



■ Lever Attached to the Upper Side •Stroke 10 – 30 mm

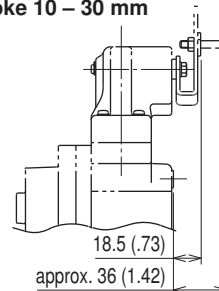


•Stroke 30 – 100 mm or 25 – 60 mm

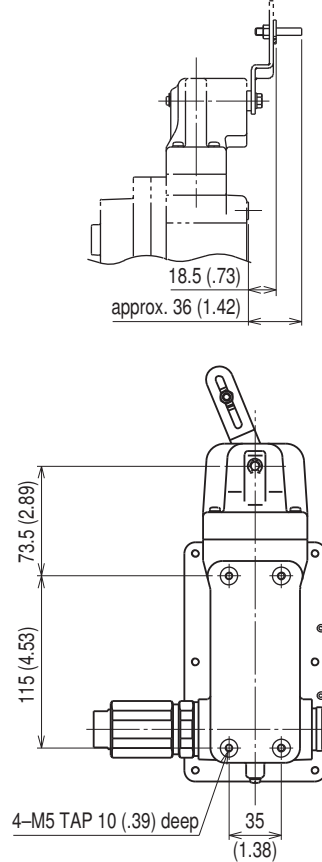


■ Lever Attached to the Lower Side

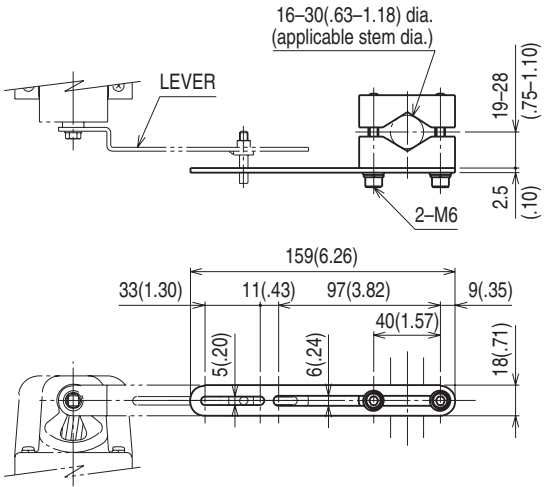
•Stroke 10 – 30 mm



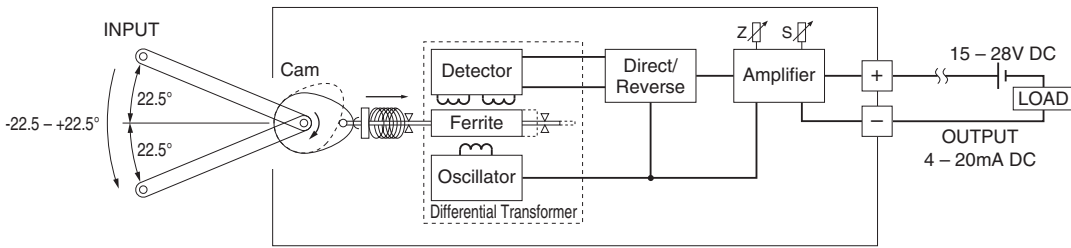
•Stroke 30 – 100 mm or 25 – 60 mm



■ CLAMP SET



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.