

# VRVT 080

## MINIATURE IN-CYLINDER TRANSDUCER



The VRVT 080 Miniature In-Cylinder Transducer combines the best features associated with LVDT's and potentiometers into one rugged, contactless and highly reliable displacement transducer.

With a diameter of only 7.95mm the VRVT 080 is ideal for installation into hydraulic and pneumatic cylinder applications where space is at a premium. The VRVT 080 is ideal for use on small-bore actuators and offers a choice of internal or external flange mounting configurations to suit tie-rod, welded and rear clevis-mounted cylinder types. Two core configurations also provide the designer the following options:

**SLEEVED CORE** - cylinder rods can be simply machined to accommodate the sleeve. This also gives the option of retro-fitting existing servo-cylinders with an upgrade to VRVT technology.

**THREADED CORE** - provides the designer with the minimum transducer body size and a simplified installation requiring minimal machining.

### PERFORMANCE

Electrical stroke length	mm	50 to 300mm standard (consult Penny & Giles for longer lengths)
Independent linearity		Stroke $\leq$ 100mm better than $\pm 0.5\%$ Stroke $>$ 100mm better than $\pm 0.2\%$ of stroke
Resolution		Virtually Infinite
Operational temperature	$^{\circ}\text{C}$	$-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$
Temperature performance	ppm	$\leq \pm 100\text{ppm}$ of electrical stroke/ $^{\circ}\text{C}$ ( $+20$ to $+60^{\circ}\text{C}$ ) $\leq \pm 200\text{ppm}$ of electrical stroke/ $^{\circ}\text{C}$ ( $-40$ to $+100^{\circ}\text{C}$ )
Operating pressure		350Bar max.
Insulation resistance		50M $\Omega$ at 100Vdc

### Note

The above specifications apply only when the VRVT080 is operated in conjunction with a Penny & Giles EM Series electronic module.

### SIGNAL CONDITIONING

Input voltages	$\pm 15\text{V}$ ( $\pm 10\%$ ) or $+18$ to $30\text{Vdc}$
Standard outputs	0 to $10\text{Vdc}$ 0 to $5\text{Vdc}$ $-5$ to $+5\text{Vdc}$ 5 to $25\text{mA}$ 0 to $20\text{mA}$ 4 to $20\text{mA}$

### Notes

Each transducer is supplied with a programming module calibrated to match the electrical stroke length. The module is plugged into the required EM electronic module via mating connectors.

Maximum recommended distance between sensor and EM electronic module is 30m.

### AVAILABILITY

The modular design of the VRVT 080 enables the rapid delivery of standard ranges.

For custom requirements (such as extended stroke lengths or special mounting flanges) please contact one of our Sales Application Engineers for assistance.

**Penny + Giles**

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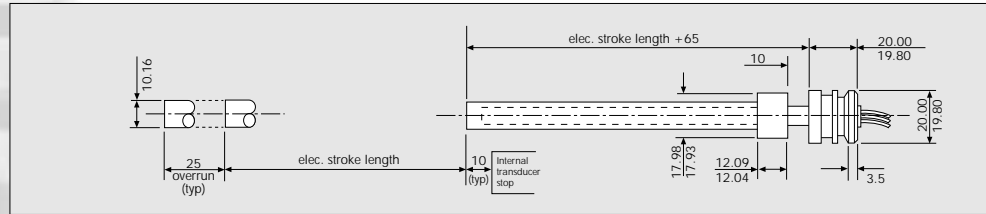
## DIMENSIONS

### Internal Flange

#### Sleeved Core

VRVT 080/I/S

Minimum bore dia 10.5mm  
Stroke length 50 to 300mm

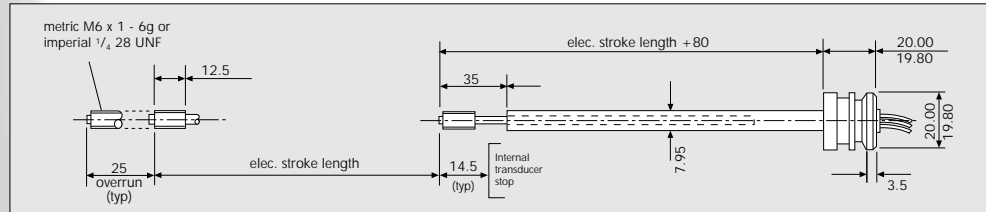


### Internal Flange

#### Threaded Core

VRVT 080/I/TM or TI

Minimum bore dia 9mm  
Stroke length 50 to 300mm

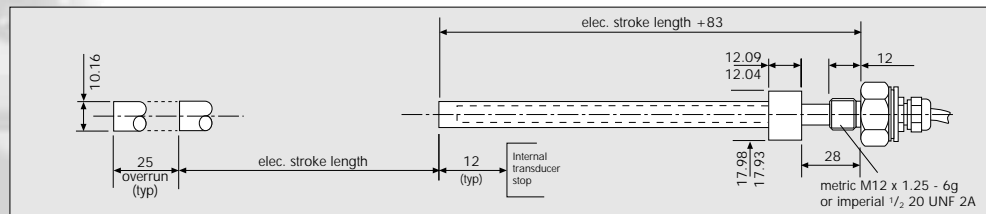


### External Flange

#### Sleeved Core

VRVT 080/E/SM or SI

Minimum bore dia 10.5mm  
Stroke length 50 to 300mm

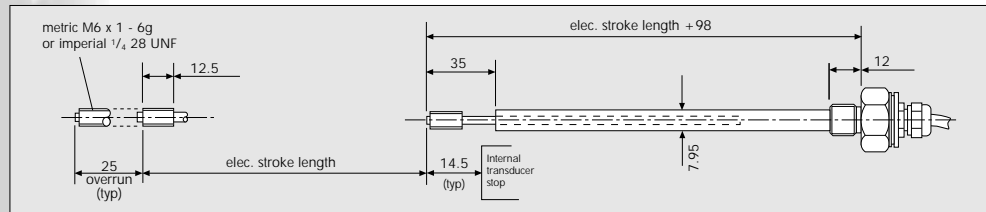


### External Flange

#### Threaded Core

VRVT 080/E/TM or TI

Minimum bore dia 9mm  
Stroke length 50 to 300mm



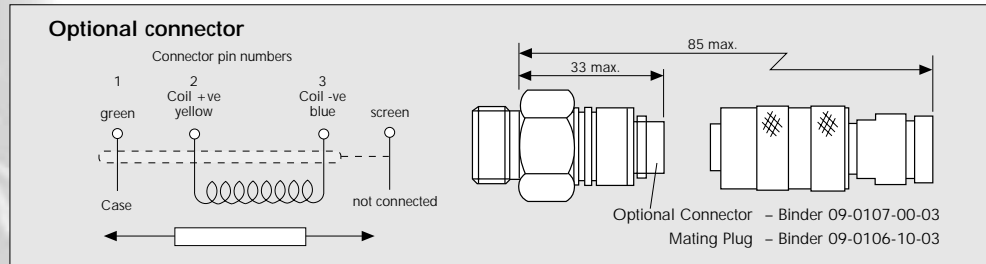
## ELECTRICAL CONNECTIONS

### Internal Flange

Flying leads: PTFE insulated  
19/0.15, 200mm long

### External Flange

Cable: 3 core + screen  
19/0.15 ETFE insulated,  
TPS120 sheath x 1m long  
(or optional connector)



Note: Drawings not to scale

## ORDERING CODES

VRVT080/..../..../..../....

- I = Internal mounted flange
- E = External mounted flange
- SM = Sleeved core (metric)
- SI = Sleeved core (imperial)
- TM = Threaded core (metric)
- TI = Threaded core (imperial)
- Stroke length mm
- External Flange only
- L = Cable leads
- C = Connector option

**NOTE** See EM Series data sheets for full technical specifications and ordering code.

### WEB SITE

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