SLT190 LINEAR POSITION TRANSDUCER

PERFORMANCE

ELECTRICAL

Electrical stroke range E	**mm**	25 to 500
Stroke increments	**mm**	25 to 200 in 25mm increments 250 to 500 in 50mm increments
Non-Linearity*	**%**	Enhanced - typically less than ±0.2% of total stroke, ±0.25% maximum (code A) Standard - typically less than ±0.4% of total stroke, ±0.5% maximum (code B)
Resolution		Virtually infinite
Temperature coefficient	**ppm/°C**	< ± 100 ppm of electrical stroke/°C (+20 to +60°C) < ± 200 ppm of electrical stroke/°C (-20 to +100°C) < ± 300 ppm of electrical stroke/°C (-20 to +150°C)
Insulation resistance		Greater than 50MΩ at 50Vdc

*Non-linearity is measured using the Least-Squares method on a computerised calibration system

MECHANICAL

Mechanical stroke range	**mm**	Electrical stroke +3mm overstroke at each end
Mounting		via M8 stainless steel rod end bearings. Suitable for mounting on 8mm or 5/16in bolts
Operating force	**gf**	<500 in horizontal plane (vented sleeve)
Shaft velocity - maximum	**m/s**	5 (see EICT performance for frequency response)
Weight	**g**	see dimensions on page 5

ENVIRONMENTAL

Protection class		IP67
Operational temperature	**°C**	-40 to +150
Storage temperature	**°C**	-50 to +150
Life		Contactless - no limitation to electrical life. Mechanical life is tested to 100 mllion operations ($5x10^6$ cycles), actual service life is dependant on installation and application.
Vibration		RTCA/DO-160E 10Hz to 2000Hz, 11.23g (rms) - radial axis only
Shock		Survival to 10000g - radial axis
EMC Immunity level		Transducer can withstand a threat of 100V/m

The performance specified is only valid when the SLT190 is operated in conjunction with the signal conditioning unit - model EICT or EICTM.

OPTIONS

Non-linearity	Standard (code B ±0.5% max), or Enhanced (code A ±0.25% max) can be specified
Extended cable length	1m or 6m output cable can be specified

AVAILABILITY

All configurations can be supplied within ten days from the factory

ORDERING CODE

SLT190/ ..../..../....

Stroke range E in mm

Non-linearity A = ±0.25%
B = ±0.50%

01 = 1m cable
06 = 6m cable

SIGNAL CONDITIONING

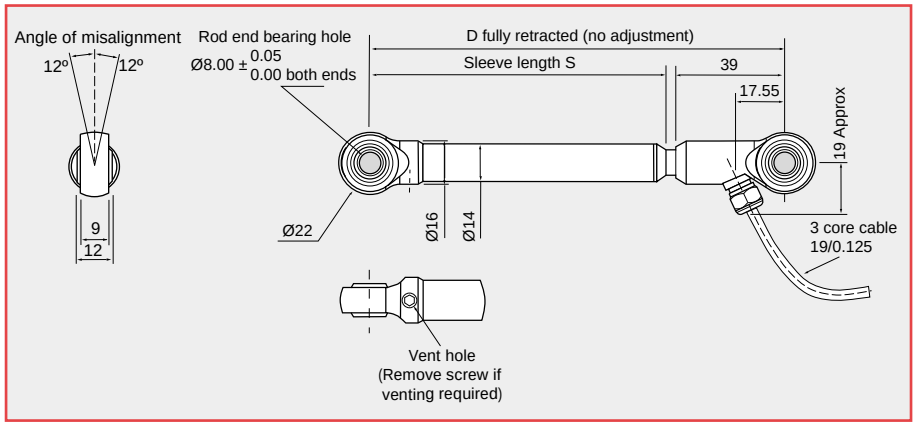
See page 6 for full EICT module performance and dimensions

Input voltage	**Vdc**	+10 to +60 nominal
Output voltage		
standard	**Vdc**	0.5 to 4.5
options	**Vdc**	0 to 5, 0 to 10, ±2.5, ±5, ±7.5, ±10 (using Voltage Module **VM** output option card)
Output current - option	**mA**	4 to 20 (using Current Module **CM** output option card)
Output PWM		TTL level compatible signal with a 10-90% duty cycle proportional to transducer displacement (using Pulse Width Modulation **PWM** output option card)

The transducer is supplied with a Sensor Calibration Module Card (**SCMC**) which is calibrated to match the transducer electrical stroke. This card must be inserted into the **EICT** signal conditioning unit before operation. Full details on installation and set-up are included in the manual supplied with the EICT module.

DIMENSIONS

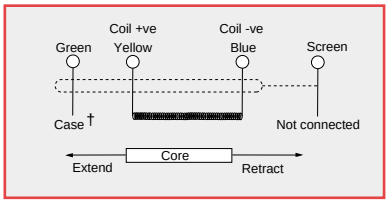
Note: drawings not to scale



Electrical stroke E	**mm**	**25**	**50**	**75**	**100**	**125**	**150**	**175**	**200**	**250**	**300**	**350**	**400**	**450**	**500**
Mechanical stroke M	**mm**	**31**	**56**	**81**	**106**	**131**	**156**	**181**	**206**	**256**	**306**	**356**	**406**	**456**	**506**
Sleeve length S	**mm**	132	157	182	207	232	257	282	307	357	407	457	507	557	607
Distance between centres D	**mm**	175	200	225	250	275	300	325	350	400	450	500	550	600	650
Approximate weight	**g**	239	258	277	296	314	333	352	370	408	446	483	520	558	595

ELECTRICAL CONNECTIONS

3 core cable: FEP sheathed 1m or 6m long with PTFE insulated 19/0.125 cores. 90% braided screen.



† The Green wire is internally connected to the transducer case. However, due to the construction of the transducer external moving parts, the Green connection should not be used as a ground connection.

Recommended cable minimum bend radius is 10mm

EICT SIGNAL CONDITIONING MODULE

The EICT signal conditioning module has been specifically designed to operate the SLT190 and ICT range of contactless linear position transducers. This module incorporate a high performance circuit that drives the transducer and provides a choice of output signals with zero and span adjustment for simple user configuration. The module can be supplied in a choice of enclosures, with sealing to IP66 or IP68 protection.

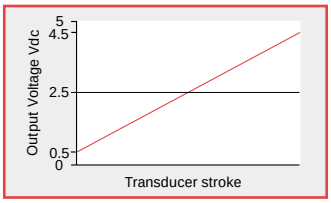
PERFORMANCE

Supply voltage, unregulated Vdc †limited to 13.5 min. on certain ranges - see options table		10 - 60 or ±(10 - 30) for standard output voltage range (**EICT** only) 10† - 30 or ±(10† - 30) for extended output voltage range (**VM** card fitted) 10 - 30 or ±(10 - 30) for current output (**CM** card fitted) or pulse width modulated output (**PWM** card fitted)
Supply current	**mA**	10 maximum (19 with **VM** card fitted, 12.6 plus output current with **CM** card fitted, 13 with **PWM** card fitted)
Output voltage signal	**Vdc**	0.5-4.5 See details on page 7 for additional output options
Output current signal	**mA**	4-20 See details on page 7 for options
Output PWM signal		TTL level compatible signal with a 10-90% duty cycle. See details on page 7
Output ripple	**mVrms**	<5
Output load	**Ω**	10k minimum (resistive to 0V line)
Frequency response	**Hz**	30 (-3dB) [equivalent to 5mS output lag]
Line regulation		<0.001% output span/Volt
Power on settlement		Within 0.25% of final output in less than 300 milliseconds
Output adjustment range		
zero adjustment		-10 to 60% of span
gain adjustment		40 to 110% of span
Operational temperature	**°C**	0 to +70
Storage temperature	**°C**	-40 to +85
Temperature stability	**ppm/°C**	200 (300 if VM card fitted)
EMC Immunity level		Threat 100V/m : derangement <0.05% FS (**EICTM** module, adjacent to transducer)
EN61000-6-2: 10kHz to 1GHz		Threat 10V/m : derangement <0.05% FS (**EICT** module, 1m cable)
Transducer types		Will only operate Penny+Giles SLT190 and ICT range of transducers
Mechanical housing		**EICT** - corrosion resistant plastic enclosure sealed to IP66, with detail to fit rail DIN EN50022 or EN50035 or bulkhead mount via four M5 screws. **EICTM** - powder coated metal enclosure sealed to IP68 with bulkhead mounting only.
Weight maximum	**g**	105 (250 for EICTM)

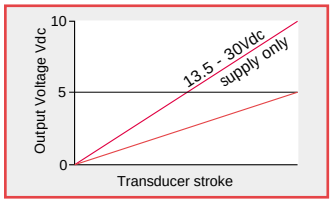
Maximum recommended distance between transducer and EICT module is 10m.

OUTPUT CHARACTERISTICS

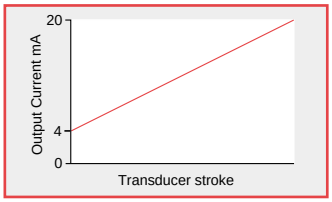
EICT standard unit
10 - 60Vdc supply



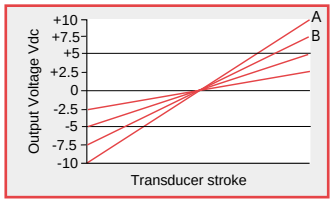
EICT with VM card fitted
10 - 30Vdc supply



EICT with CM card fitted
10 - 30Vdc or ± (10 - 30) Vdc supply



EICT with VM card fitted
10 - 30Vdc or ± (10 - 30) Vdc supply



Note: A and B outputs only available with a ±(13.5 - 30) Vdc supply

Notes:

1. The SLT190 transducer is supplied with a Sensor Calibration Module Card (SCMC) which is calibrated to match the transducer electrical stroke. This card must be inserted into the EICT signal conditioning unit before operation. The EICT is user configurable for input and output options.
   Full details on installation and set-up are included in the manual supplied with the EICT module.

OUTPUT OPTIONS

Output option	Supply voltage range Vdc Single or (Dual) supply	EICT	EICT with **VM** option card	EICT with **CM** option card	EICT with **PWM** option card
0.5 - 4.5Vdc	10 - 60 or ±(10 - 30)	✔	N/A	N/A	N/A
0 - 5Vdc	10 - 30 or ±(10 - 30)	N/A	✔	N/A	N/A
0 - 10Vdc	13.5 - 30 or ±(13.5 - 30)	N/A	✔	N/A	N/A
±2.5Vdc	10 - 30 or ±(10 - 30)	N/A	✔	N/A	N/A
±5Vdc	10 - 30 or ±(10 - 30)	N/A	✔	N/A	N/A
±7.5Vdc	13.5 - 30 or ±(13.5 - 30)	N/A	✔	N/A	N/A
±10Vdc	13.5 - 30 or ±(13.5 - 30)	N/A	✔	N/A	N/A
4 - 20mA	10 - 30 or ±(10 - 30)	N/A	N/A	✔	N/A
TTL (10-90%)	10 - 30 or ±(10 - 30)	N/A	N/A	N/A	✔
Slope reversal		✔	✔	✔	✔

PWM output signal

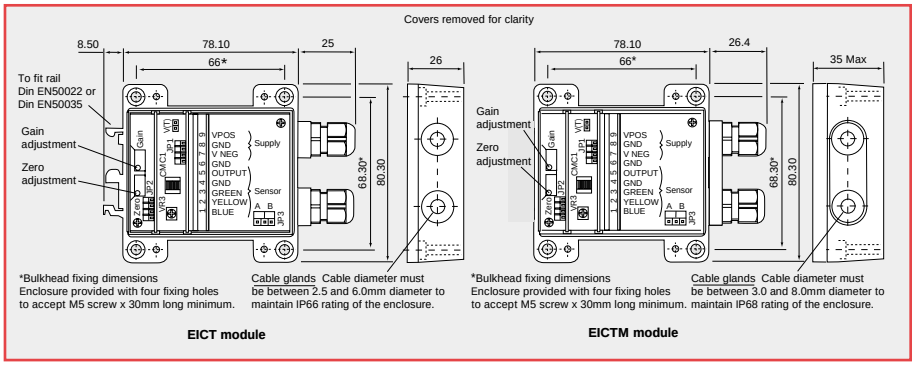
Output frequencies	**Hz**	100, 130, 310, 1000 (user selected)
Frequency accuracy	**%**	±10
Output levels	**Vdc**	LOGIC HIGH 4.5 ±0.5 LOGIC LOW <0.4
Rise/Fall time	**µS**	<2 with 1nF. load capacitance
Output range	**%**	10 (zero) to 90 (span)

TTL level compatible signal with a 10-90% duty cycle

Continual development of output options means we are working on additional **EICT** module output options. Please ask for details

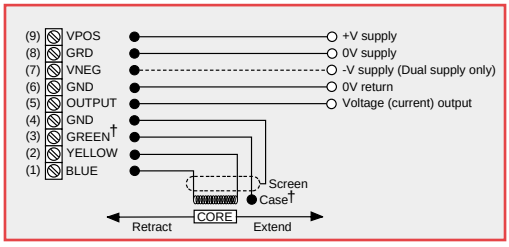
DIMENSIONS

Note: drawings not to scale



ELECTRICAL CONNECTIONS

Screw terminals



Misconnection of the supply may cause permanant damage

† The Green wire is internally connected to the transducer case. However, due to the construction of the transducer external moving parts, the Green connection should not be used as a ground connection.

Note: refer to the EICT set-up guide for details on how to connect to a split rail power supply.

AVAILABILITY

Normally available from stock

ORDERING CODES

EICT - module with 0.5 to 4.5Vdc output, IP66 protected plastic housing

EICTM - module with 0.5 to 4.5Vdc output, IP68 protected metal housing

ACCESSORIES order separately

VM - voltage module output option card

CM - current module output option card

PWM - pulse width modulation output option card