SURFACE MOUNTED SMD CARD

FOR LINEAR DISPLACEMENT TRANSDUCERS LVDT

MOD. EL 546

DS Europe
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A) CONNECTIONS

CONNECTOR	EL 546	LVDT
1	**Secondary** (Coil 1)	**Yellow**
2	**Secondary** (Coil 2)	**Black**
3	**Primary** (Coil 1)	**Red**
4	**Primary** (Coil 2)	**Red**
5	**Ground - Power Supply**	
6	**Ground - Output**	
7	**+ Voltage Output**	
8	**+ Power Supply** **+ 12 or 24 Vdc**	

- Blue and Green leads are to be soldered together and kept insulated.
- It is advisable to connect "EARTH" pin to earth in order to erase environmental electrical noise.

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B) ELECTRICAL FEATURES

- **Zero:** 100% FS
- **Gain:** 1-1000
- **Working Temperature :** -40÷ + 85°C
- **AC excitation voltage applied to primary:** 0-30 VEFF, 2,5 KHz.
- **Power Supply to EL 546:** 12 Vdc or 24 Vdc (filtered, stabilised).
- **Output Wareform:** Sinusoidal.
- **Maximum current:** 60 mA (depending on LVDT).

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~ **INTRODUCTION** ~

It is advisable a 20 minutes warming in order to have a better thermal stability.

Do not use the core outside the nominal full scale ("mm") because otherwise there is no more a good magnetic coupling between primary and secondary coils thus having a bad linearity.

C) LVDT INSTALLATION

▫ CORE:

- By mean of a*magnetic M3 threaded rods*: teflon, bronze, brass, stainless steel series 300, etc. (in order to not interfere with magnetic coupling).

- *Core Orientation*: the factory marking has to be oriented to where are wires, in order to use it properly.

▫ EXTERNAL CASE OF LVDT:

- Through: *clamp, screw, vice, etc.*
  It is advisable to ground the external case in order to avoid electrical noise.

D) CALIBRATION

- It is possible to set the AC excitation on the primary coil by means of the "LEVEL" trimmer hence by raising it.
  It is possible to raise the output from secondary coils.
  We suggest a 6 Veff power supply.

- With a digital voltmeter or oscilloscope, look for the null position that is equal to the mechanical zero: connect secondary coils in opposite phase (YELLOW + BLACK) and move the core up to reach the mid section of LVDT.

- **Zero Setting:**
  with the overmentioned null position, set ZERO trimmer up to get a zero voltage output on terminal 7 + 6.

- **Gain Setting:**
  make reference to one of the following:

  1) By using a MICROMETER and starting from null position, move the core up to reach the positive or negative full scale (mm) and then set GAIN TRIMMER in order to have a a 5 V output (clamps: 7 + 6).

  2) By using the SENSITIVITY value (V/mm/Vecc) enclosed with the LVDT, multiply it with FULL SCALE (mm) and the primary coil excitation voltage (V_{ECC} = V_{EFF}) and You get the output on secondary coils when they are in phase opposition.

  Starting from the NULL POSITION, move toward one end up to get on terminal 7 + 6 the voltage so far calculated that correspond to the full scale.