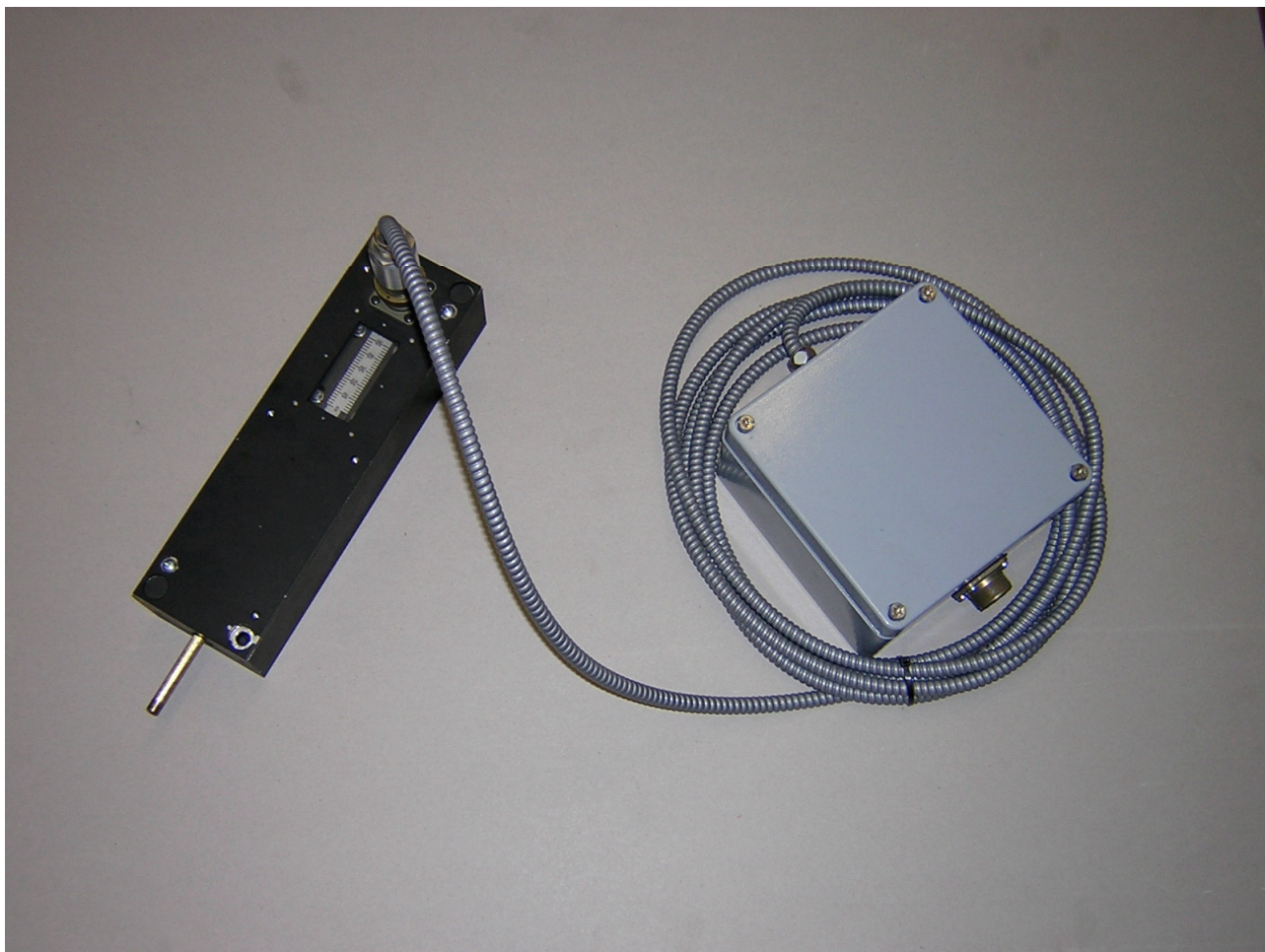


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## **T5-LVDT/50-24 TRANSDUCER**



### **FUNCTION**

The transducer T5-LVDT/25/24 is used for performing the measurement of Absolute Displacement, the measurement is made by means of a position transducer system based on a linear variable differential transformer (LVDT) by mounting the transducer body on a fixed point and positioned so that the sensor tip of transducer T5-LVDT/50 presses permanently against one end of the movable part of the machine casing. The as picked-up signal is sent to the adapter part AD1-BOX (signal converter situated downstream of the transducer), which makes it suitable for processing by one CEMB T5 unit.

### **PRINCIPLE OF OPERATION**

A rod in close contact with the movable part to be checked is strictly integral with a magnetic core moving within a fixed coil inside the transducer sensor body. The coil has one primary winding and two secondary windings connected in opposing phase; the output signal (secondary winding) is proportional to the mechanical displacement of the core and should, therefore, be sent to an adapter module (AD1) which makes it suitable for subsequent processing by CEMB instruments, of the "T" series.

### **TECHNICAL CHARACTERISTICS**

Range of measurement	: 0 to 50 mm
Sensitivity	: 0,4 V/mm
Composition	: Sensor T5-LVDT/50 Adapter AD1-BOX
Transformer LVDT	: . Impedance, primary winding = 600 ohm/2500 Hz . Impedance, secondary windings = 800 ohm/2500 Hz . Max linearity error = $\pm 0.5\%$ f.s. . Nominal sensitivity = 34 mV/0.001"/V . Frequency range = 50 Hz to 10 kHz . Supply voltage = 3 V rms (rated)
Range of application	: . Temperature = -55°C to +95°C . Humidity = max 95% not condensing . Vibrations = max 20 g / 2 KHz . Ambient = IP55 EN 60529/10.91 standards
Maintenance	: none
Power supply	: . Transducer = +15 Vdc, GND Adapter = +15 to +24 Vdc, GND
Connection	: . Transducer = connector 7-pin MIL C-5015 series 3106/16, standard kit . Adapter = connector 5-pin MIL C-5015 series 3106/16, standard kit
Outer casing material	: Aluminium
Weight	: Kg 12,5 approx.
Drawings enclosed	: 55348 = Overall dimensions, mounting, connections

#### **N.B.**

The sensor part carries a removable cover at the top. After removing this cover, it is possible to read the mechanical value of turbine casing expansion on a graduated scale.

## **TRANSDUCER POSITIONING**

Refer to drawing Nr. 55348.

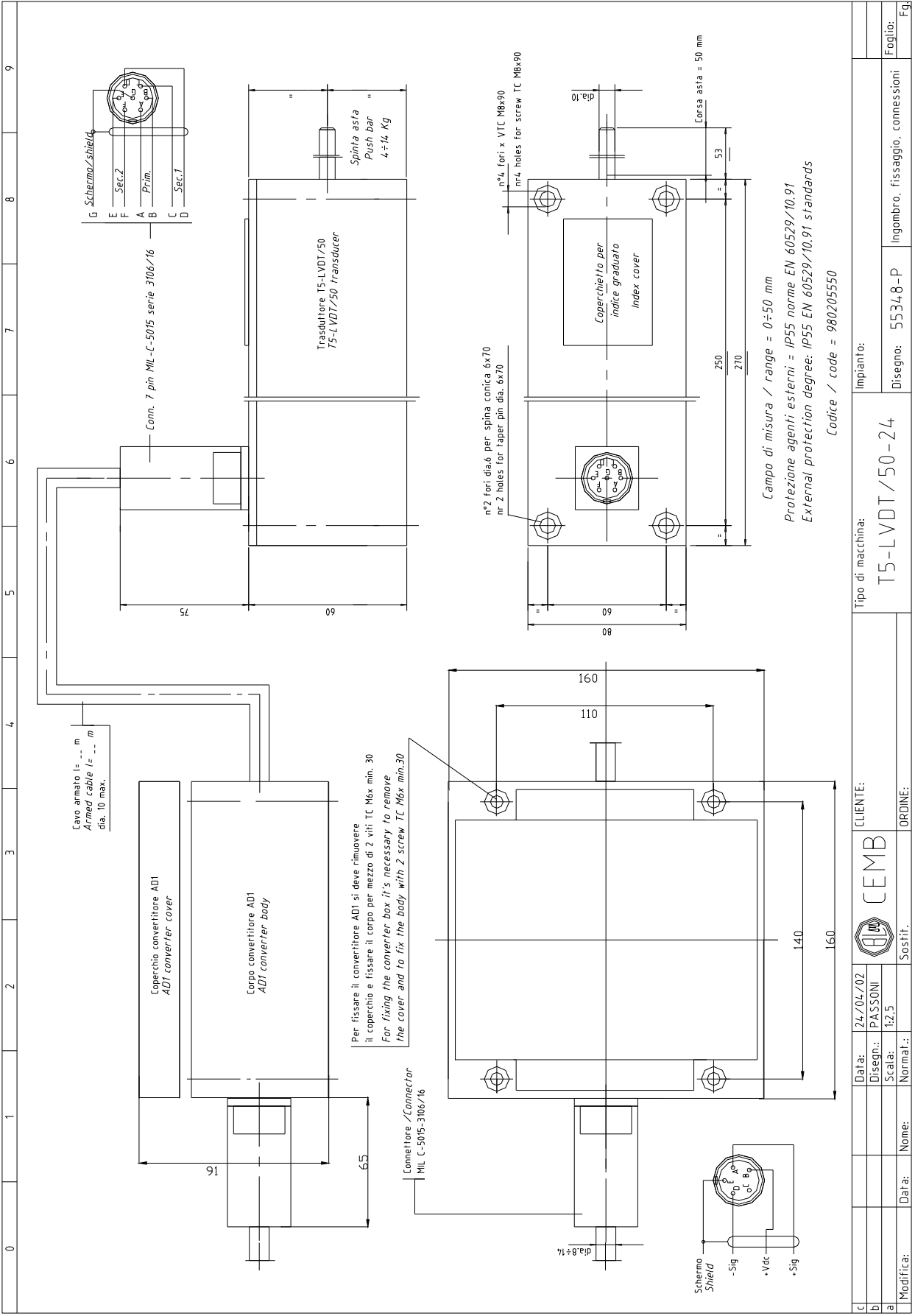
### **FOREWORD**

The sensor part carries a removable cover at the top. After removing this cover, it is possible to read the mechanical value of the displacement on a graduated scale. The transducer tip is fitted with a protective cap to protect against damage during transport. Hence such cap should be removed during assembly. The tip is held firmly in contact with the movable part of an internal spring device which also provides a preloading stroke of 3.0 mm of the tip.

### **OPERATIONS TO BE PERFORMED**

Remove the protective cap from the tip and separate the sensor part from the adapter part AD1.

- 1) Remove the protective cap from the mechanical pointer of the sensor.
- 1) Make sure that the movable part to be tested (turbine casing) is in zero or known displacement position.
- 2) Drill the mounting holes for the two parts making up the transducer: for the sensor part, bear in mind the preloading stroke, then provisionally fasten the sensor checking that the mechanical pointer gives the zero position (or known position) of the displacement with exact preloading.
- 3) Electrically connect the sensor part to the adapter part, then the latter to the T instrument using the connectors supplied as standard and following the manual operating instructions.
- 4) With the transducer connected and energized, and by means of a voltmeter connected across pins A and D of the adapter connector (or else across the terminals corresponding to the input of the measuring instrument transducer signal), search for the exact coincidence between the mechanical measurement checked and prepared in points 3 and 4 and the electrical reading corresponding to the displacement, bearing in mind that a displacement of 0 mm corresponds to 0.0 Vdc, a displacement of 25.0 mm corresponds to 5.0 Vdc, while 50.0 mm corresponds to 10.0 Vdc. Make some small displacements of the sensor part until the electrical reading corresponds to the actual reading on the graduated scale.
- 5) Then lock the two parts making up the transducer into position and proceed to pin the sensor.
- 7) For all these operations the utmost care is recommended in order not to damage the internal mechanisms; above all, avoid sudden releases and knocks on the movable rod of the tip.



Data: 24/04/02		Disegn.: PASSONI		Scala: 1:2.5		Normal.:		Sostit.:		CIENTE: CEMB		Tipo di macchina: T5-LVDT/50-24		Impianto:		Disegno: 55348-P		Ingombro, fissaggio, connessioni		Foglio: Fg	
Modifica:		Data:		Nome:		Normal.:		Sostit.:		CIENTE: CEMB		Tipo di macchina: T5-LVDT/50-24		Impianto:		Disegno: 55348-P		Ingombro, fissaggio, connessioni		Foglio: Fg	