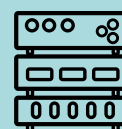




TCI
LINE

ANALOG INTEGRATION OF MEASUREMENTS IN A PLC



Interface Boxes for Data Acquisition

TCI™ is a line of interface boxes featuring one, four, eight channels respectively. It has been developed with technical and functional features particularly suitable to convert a position or dimensional measurement carried out by LVDT or HBT sensors into a signal compatible with most of the analog cards for data acquisition.

TCI interfaces are PLUG&PLAY units that are delivered specifically calibrated for the sensor to be connected to. In this way the machine downtime is dramatically reduced, thanks to quicker installation and maintenance operations.

THE PRODUCT LINE

Displacement
Sensors



TCI

TCI1 to connect a single transducer. The power supply connector is included in the supply.

Bore
Gauges



TCI

TCI4 to connect up to 4 transducers. The power supply connector is included in the supply. The D-Sub 37 for output signals is not included.

Forks and
Ring Gauges



TCI

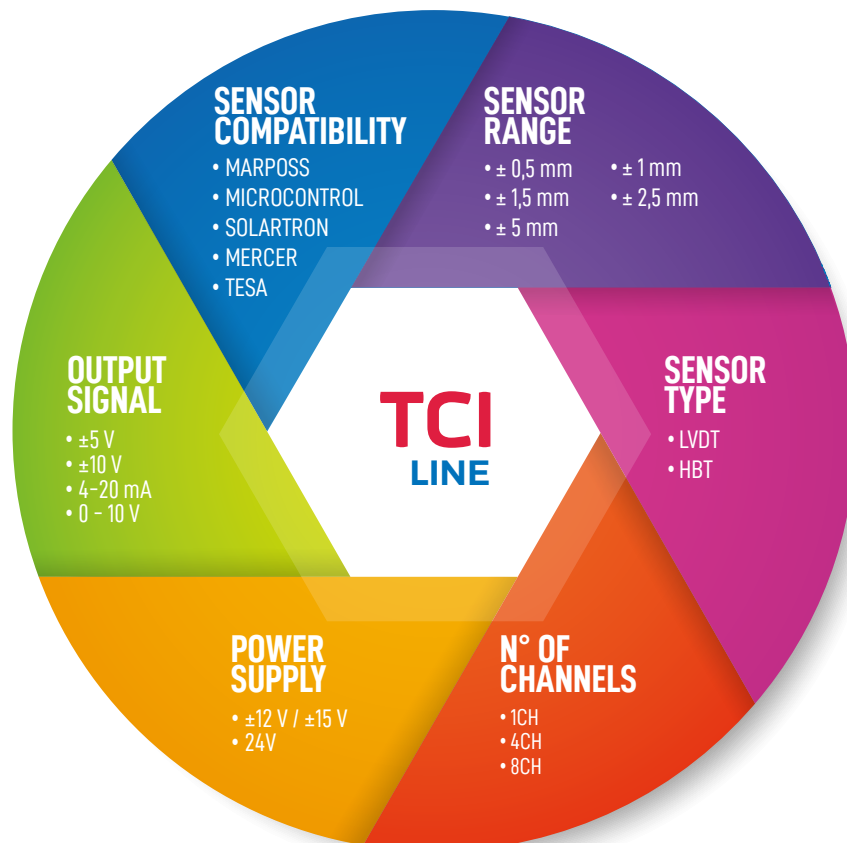
TCI8 to connect up to 8 transducers. The power supply connector is included in the supply. The D-Sub 37 for output signals is not included.

Bench
Gauges



Product mix

Please refer to the below reported scheme for the TCI line product mix overview. In case you are looking for a dedicated solution don't hesitate to contact Marposs.



Indicators and
Electronic
Display Units



Interface
Boxes for Data
Acquisition



Software



Product features

The output of this unit provides a direct electric signal (voltage or current), proportional to the measurement value of the input sensor. The output signal can be fetched by PLC analog cards, in order to control and manage process automations and to be further elaborated by systems such as SCADA supervisors.

Output signal

Two different output signals are available:

- Voltage ($\pm 5\text{Vdc}$, $\pm 10\text{Vdc}$, $0-10\text{Vdc}$)
- Current ($4-20\text{mA}$).

Power supply

The electrical supply is provided by the same connector used for the output signal. The TCI can be ordered both in dual voltage mode ($\pm 15\text{Vdc}/\pm 12\text{Vdc}$) and single voltage mode (24Vdc).

Sensors compatibility

Both LVDT (full bridge) and HBT(half bridge) sensors from Marposs and other manufacturers, such as Solartron, Tesa, etc., can be connected to the TCI. The specifications of the transducer model/brand to be connected to the TCI are required on the purchase order, in order to perform an ad-hoc calibration.

HOW TO ORDER

The code to order a TCI is defined by means of the following specifications.

1. Transducer type (LVDT or HBT)
2. Number of channels
3. Measuring range of the sensor
4. Power supply type
5. Compatibility (*)
6. Output type

Example

	B	6	7	4	6	T	N	X	A	C	U
LVDT						0	0	1	1	0	2
1 CHANNEL											
$\pm 1\text{mm}$											
24 V											
MARPOSS											
CURRENT 4-20 mA											

	B	6	7	4	6	T	N	X	A	C	U
TRANSDUCER TYPE	LVDT					0					
	HBT					1					
NUMBER OF CHANNELS	1 CH						0				
	4 CH						2				
	8 CH						3				
MEASURING RANGE	$\pm 0,5$							0			
	± 1							1			
	$\pm 1,5$							2			
	$\pm 2,5$							3			
	± 5							4			
POWER SUPPLY	$\pm 15\text{V} / \pm 12\text{V}$								0		
	24 V								1		
COMPATIBILITY (*)	Marposs									0	
	Microcontrol									1	
	Solartron									2	
	Mercer									3	
	Tesa									4	
OUTPUT SIGNAL	$\pm 5\text{V}$										0
	$\pm 10\text{V}$										1
	4-20 mA										2
	0-10 V										3

Note. (*) If the transducer type is not included in the list, please contact your nearest Marposs office to define the specific order code.

Displacement Sensors



Bore Gauges



Forks and Ring Gauges



Bench Gauges



Indicators and Electronic Display Units



Interface Boxes for Data Acquisition



Software



TECHNICAL SPECIFICATIONS

Displacement Sensors



Mechanical specifications	TC11	TC14 and TC18
Protection degree (with connectors plugged in)	IP52	IP54
Weight	0,14 kg	0,8 kg
Operating temperature	0° + 50 °C	
Storing temperature	-25° + 75 °C	
Operating relative humidity (not condensing)	20% - 80%	
Storing relative humidity (not condensing)	10% - 95%	

Bore Gauges



Electrical specifications	TC11	TC14 and TC18
Linearity error	max 0.05% of the end scale	max 0.1% of the end scale
Gain drift	max 0.02% °C of the end scale	max 0.04% °C of the end scale
Offset drift	max 0.02% °C of the end scale	max 0.01% °C of the end scale
Power supply rejection ratio (gain+offset)	max 0.04% / V of the end scale (voltage: ±15V)	
Output ripple (AF spike excluded)	max 10 mV rms voltage output	
Transducer frequency	20 µA rms current output Typical 5.1 KHz	15 µA rms current output Typical 5.0 KHz
Transducer voltage supply	Typical 3.3 Vrms	Typical 3.4 Vrms
Transducer current supply	Max 30 mA	
Bandwidth	Typical 500 Hz	

Forks and Ring Gauges



Voltage supply	TC11	TC14 and TC18
±15 V	Dual filtered and stabilised ±15 Vdc ±5% Max. ripple allowed at 100/120 Hz: 50 mVpp	
Typical consume with transducer connected	Voltage output: ±20 mA Current output: ±40 mA	Voltage output: ±270 mA max. Current output: ±450 mA max.
±12 V (if configured with a tension output signal)	±12 Vdc ±5% Max. ripple allowed at 100/120 Hz: 50 mVpp	
Typical consume with transducer connected	Voltage output: ±20 mA Not available with current output	Voltage output: ±270 mA max. Current output: ±450 mA max.
+24 V	Single 24 Vdc ±10% Max. ripple allowed at 100/120 Hz: 200 mVpp	
Typical consume with transducer connected	Voltage output: 45 mA Current output: 65 mA	Voltage output: 300 mA max. Current output: 500 mA max.

Bench Gauges

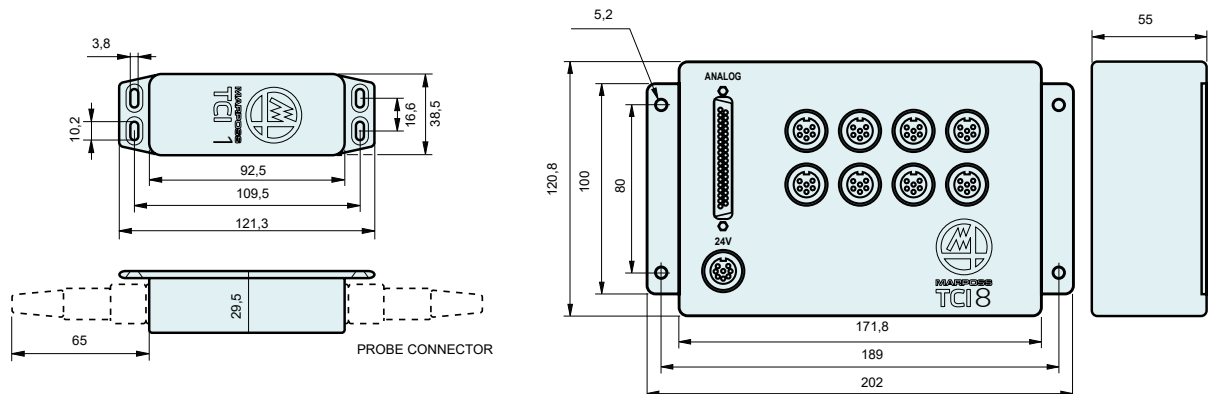


Output signal	TC11	TC14 and TC18
Tension mode	±5V ±10V 0-10V	Maximum output current ±1 mA Maximum output current ±1 mA Maximum output current ±1 mA
Current mode	4/20 mA	Load impedance max. 250 ohm, min. 100 ohm

Indicators and Electronic Display Units



DIMENSIONS



Interface Boxes for Data Acquisition



Software

