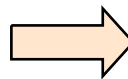


**Measurements of: WEIGHT, FORCE, PRESSURE, TORQUE and DISPLACEMENT**

- ✓ RS485 Modbus TCP
- ✓ RS232
- ✓ USB

**OPTIONS:**

- ✓ Profinet
- ✓ Profibus
- ✓ Ethernet IP
- ✓ EthernetTCP
- ✓ EtherCat
- ✓ CANOpen



The **TDH** model digital transmitter with integrated display has been designed to connect and manage measurement sensors directly from the PLC via analog, serial or fieldbus inputs.

Ideal for measuring **WEIGHT, FORCE, PRESSURE, TORQUE** and **DISPLACEMENT**.

It is possible to transmit measurements from:

- Load cells.
- Force transducers.
- Pressure transducers and transmitters.
- Torque transducers.
- Displacement transducers.

In the standard version with **2 mV/V** and **3 mV/V** input the following are available:

- **RS232C** and **RS485 Modbus TCP** output.
- Front **USB** output for transmitter configuration.
- **2 SET POINT** with photorelay logic outputs for alarm management.
- **2 digital inputs** programmable opto-isolated to activate different logic functions from the outside.
- Internal keyboard for manual transmitter configuration and calibration.

As an **OPTION** you can have:

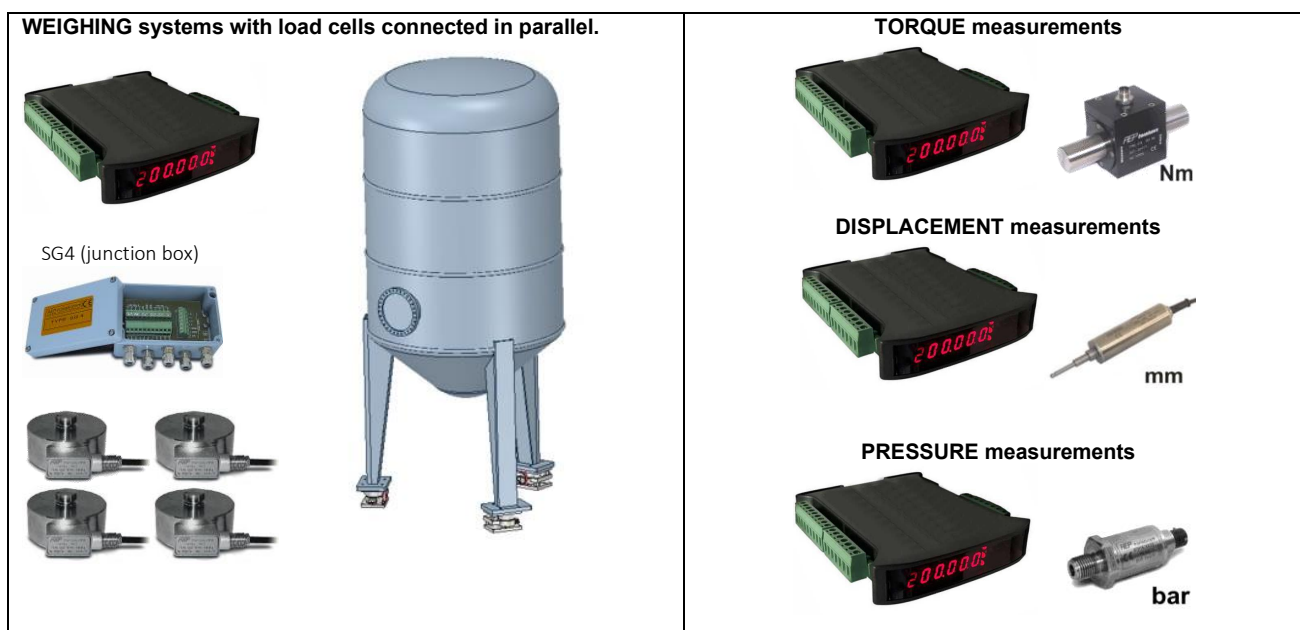
- **Entrance** analog 4-20 mA or  $\pm 10$  Volt to manage amplified sensors.
- **Field bus**: Profinet, Profibus, Ethernet IP, Ethernet TCP, Ethercat, CANOpen.
- **Analog output** 4-20mA or  $\pm 10$  Volts.
- **Configuration software** WinTDH.

TDH uses a 24bit internal converter that guarantees a stable resolution of  $\pm 100,000$  divisions with an accuracy of  $\pm 0.01\%$ . To suit each application, it is possible to set a different acquisition speed selectable from 0.1Hz to 250Hz.





The instrument is suitable for internal mounting in electrical panels on 35mm DIN rail.

## TYPICAL APPLICATIONS

Automatic weighing and small dosage systems.  
 Level control systems on tanks, silos and hoppers.  
 Integrated measurement systems on test and inspection benches.  
 Measurement systems integrated into automatic processes.  
 Industrial process control systems.  
 Automatic Testing and Quality Control Systems in production lines.  
 Measurement control on board materials testing machines.








## BASIC CONFIGURATION

INPUT					
FUNCTIONS	Power supply 24Vdc		ZERO	<b>2 Setpoint Programmable</b>  Used for: <ul style="list-style-type: none"><li>• ON / OFF engine</li><li>• ON / OFF solenoid valves</li><li>• Min. and max. reporting</li></ul>	<b>2 Programmable digital inputs</b>  Used for: <ul style="list-style-type: none"><li>• Manual controls (KEYS)</li><li>• Direct commands for PLC</li></ul>
		USB 2.0 	PEAK		
		RS232C	Regulation FILTER		
		RS485 Modbus	AUTOZERO		
			DIGITAL CALIBRATIONS		

## ADDITIONAL OPTIONS

<b>INPUT</b>	<b>OPTION</b> $\pm 10\text{ V}, \pm 5\text{ V}$ $4\text{-}20\text{ mA}$
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<b>OPTIONS</b>	<b>FIELD BUS:</b>  <ul style="list-style-type: none"> <li>Profinet</li> <li>Profibus</li> <li>Ethernet IP</li> <li>Ethernet TCP</li> <li>EtherCat</li> <li>CANOpen</li> </ul>	<b>ANALOG OUTPUT:</b> $\pm 10\text{ V}$ or $4\text{-}20\text{ mA}$ The refresh rate of analog signals is equal to the conversion rate.   	<b>SOFTWARE Application for instrument configuration</b> <b>WinTDH</b> 
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## TECHNICAL DATA

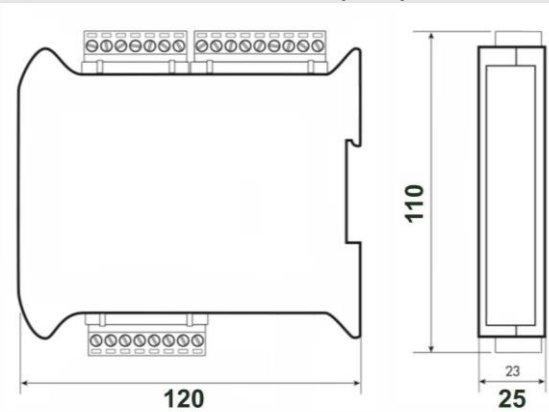
<b>NUMBER OF CHANNELS INDEPENDENT</b>	<b>1</b>
<b>ACCURACY</b>	$\leq \pm 0.010\%$
<b>LINEARITY ERROR</b>	$\leq \pm 0.010\%$
<b>INTERNAL DIVISIONS</b>	24 bit
<b>ENTRANCE STRAIN GAUGE TRANSDUCERS</b>	$\pm 2\text{ mV/V}$ and $\pm 3\text{ mV/V}$ (max $\pm 4\text{ mV/V}$ )
<b>RESOLUTION</b>	$\pm 100,000$ div
<b>TRANSDUCERS POWER SUPPLY</b>	5 Vdc ( $\pm 3\%$ )
<b>CONNECTION SYSTEM</b>	4 or 6 wires
<b>PARALLEL CONNECTABLE TRANSDUCERS</b>	4 from $350\Omega$ or 8 from $700\Omega$
<b>RED LED DISPLAY</b>	6 digit 7 segment
<b>CHARACTER HEIGHT</b>	~ 8mm
<b>Signal LED</b>	3
<b>INTERNAL programming KEYBOARD</b>	3 key
<b>SENSOR CALIBRATION</b>	Digital via keyboard or software
<b>TYPES OF DIGITAL CALIBRATIONS</b>	Full Scale or Known Weight
<b>ZERO FUNCTION</b>	YES
<b>AUTOZERO FUNCTION</b>	Programming Time and Intervention Threshold
<b>PEAK FUNCTION</b>	POSITIVE
<b>PROGRAMMABLE RESOLUTION</b>	YES
<b>PROGRAMMABLE DIGITAL FILTER</b>	YES
<b>PROGRAMMABLE DECIMAL POINT</b>	0 ... 4
<b>PROGRAMMABLE CONVERSION SPEED</b>	From 1 to 250 samples per second
<b>SENSOR CABLE BREAK CHECK FUNCTION</b>	YES
<b>KEYBOARD KEYBOARD FUNCTION</b>	YES
<b>PROGRAMMABLE SET POINTS</b>	2 photorelay outputs with NO contact
<b>MAXIMUM CONTACT VOLTAGE</b>	24 Vdc/Vac
<b>MAXIMUM CURRENT</b>	Contact rating 100 mA
<b>DIGITAL INPUTS with Programmable Function</b>	2 optoisolated
<b>USB output front, type C connector</b>	Max Cable Length 3.5 m
<b>RS232C half duplex output</b>	Maximum distance 15 m
<b>RS485 Modbus TCP Output</b>	Maximum distance 1000 m

NOMINAL WORKING TEMPERATURE	0... +50 °C
STORAGE TEMPERATURE	-20... +60 °C
TEMPERATURE VARIATIONS (10°C) above zero	≤ ± 0.01 %
TEMPERATURE VARIATIONS (10°C) on full scale	≤ ± 0.01 %
GENERAL POWER SUPPLY	24 Vdc ± 10 %
PROTECTION	POLARITY REVERSE
RESETTABLE PROTECTION FUSE	INTERNAL
MAXIMUM POWER	3 VA
INSULATION	CLASS II
CONTAINER MATERIAL	ABS SELF-EXTINGUISHING
DEGREE OF PROTECTION (EN 60529)	IP40 (front panel only)
DEGREE OF ENVIRONMENTAL POLLUTION	1
DIMENSIONS (HXWxD) MM	110 x 120 x 25 mm
ASSEMBLY	Quick coupling for DIN rail (EN 60715)
ELECTRICAL CONNECTIONS	Removable terminal blocks
WEIGHT	~ 0.8 kg

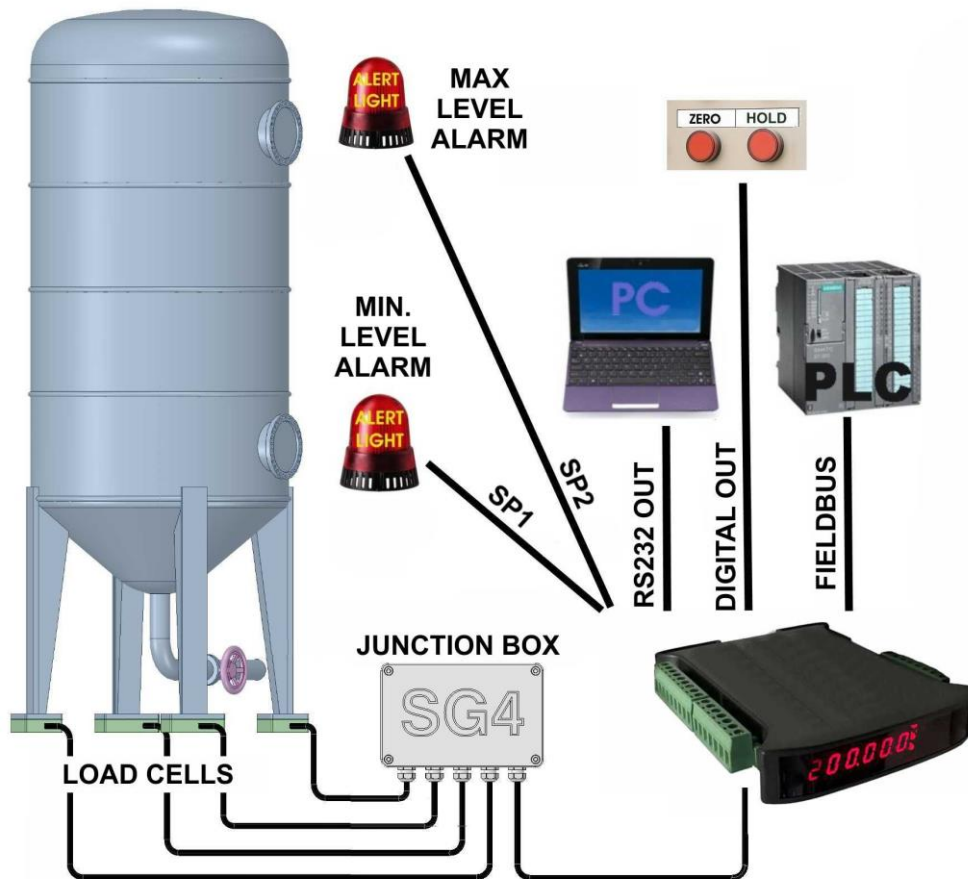
### OPTIONS

<b>ANALOG OUTPUT</b>	± 10 V
RESOLUTION	16 bit
IMPEDANCE	Min. 10 kW
LINEARITY	≤ ±0.03 %
TEMPERATURE CHANGES (10°C)	≤ ±0.02 %
DIGITAL CALIBRATION	Via internal keyboard
<b>ANALOG OUTPUT</b>	4-20mA
RESOLUTION	16 bit
IMPEDANCE	Max 300W
LINEARITY	≤ ±0.03 %
TEMPERATURE CHANGES (10°C)	≤ ±0.02 %
DIGITAL CALIBRATION	Via internal keyboard
<b>INPUT FOR AMPLIFIED TRANSDUCERS</b>	4-20mA or ± 10 Volts
TRANSDUCER POWER SUPPLY	EXTERNAL
<b>FIELD BUS OUTPUT:</b>	Profinet
	Profibus
	Ethernet IP
	Ethernet TCP
	EtherCat
	CANOpen
 <p>With the fieldbus it is excluded RS485 Modbus output</p>	

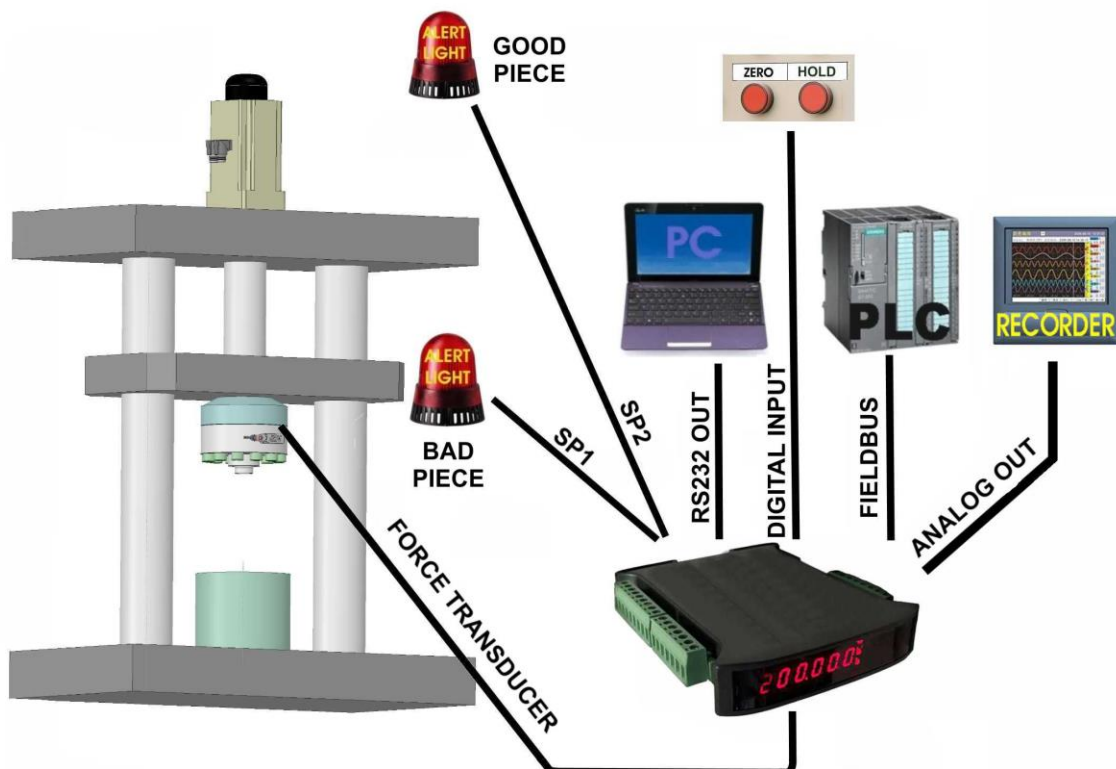
### DIMENSIONS (mm)



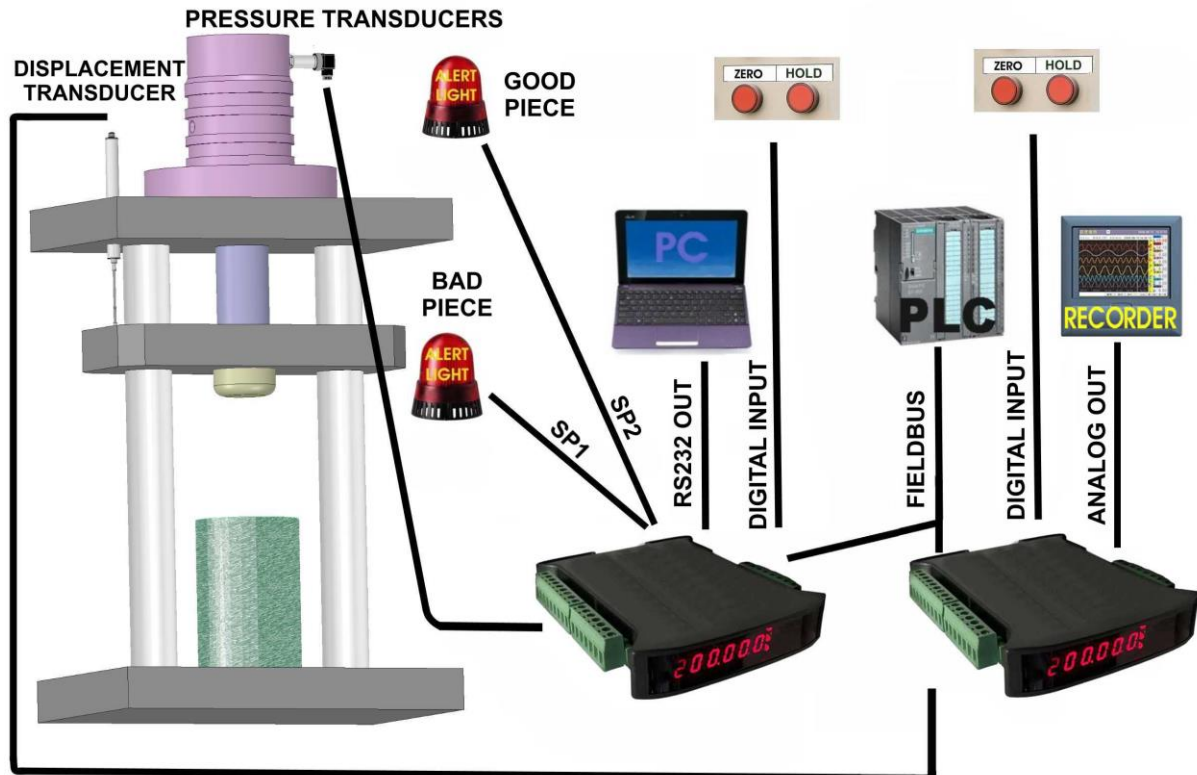
## Typical APPLICATIONS



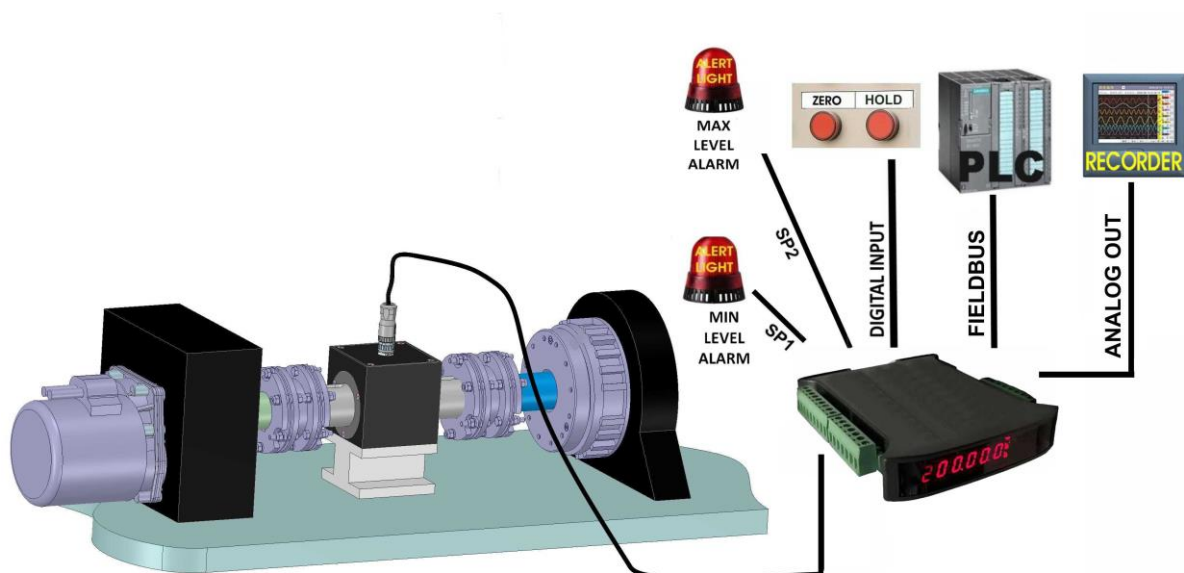
WEIGHING system of a silo.



Press measuring system with direct FORCE control.



Measuring system on hydraulic or pneumatic press with direct control of PRESSURE and DISPLACEMENT



Brake test bench measurement system with torque control.



**PURCHASE CODES**

	Input	Analog Output	Fieldbus
<b>TDH</b>	<b>X</b>	<b>XX</b>	<b>XX</b>
	<b>2</b> 2mV/V	<b>A4</b> 4-20mA	<b>PN</b> Profinet
	<b>4</b> 4-20mA	<b>A1</b> ±10 Volts	<b>PB</b> Profibus
	<b>1</b> ±10 Volts		<b>EI</b> Ethernet IP
			<b>ET</b> EthernetTCP
			<b>EC</b> EtherCat
			<b>CO</b> CANOpen

**Example: TDH2A4**(Link with 2mV/V input + 4-20mA analog output)

**Example: TDH4PN**(Link with 4-20mA input + Profinet)

**Example: TDH1A1CO**(Link with entrance±10 Volt + analog output±10 Volts + CANOpen)



Measurements of WEIGHT, FORCE, PRESSURE and TORQUE since 1974



Dasa-Rägister  
EN ISO 9001:2015  
IQ-1100-01



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