

**STAR** is a professional ergonomic indicator extremely versatile and easy to be used for measurement of FORCE, WEIGHT, PRESSURE (gas), VACUUM, TORQUE and DISPLACEMENT.

It is possible to integrate inside a force sensor (up to max. 5kN) or a pressure sensor (relative, absolute or differential up to max. 5bar) while from the external input it is possible to connect strain gauges sensors with output in mV/V such as: load cells, force transducers, pressure transducers, torque and displacement transducers.

Internally the microcontroller processes the signals coming from the sensors through a 24 bit ( $\pm 50.000$  divisions at 2mV/V) analog digital converter at a conversion frequency varying from 5Hz at 4800Hz by making it suitable for every application that may require both high resolution and high sampling frequencies.

The display of measurements happens through a big graphic backlighted display.

**Star** is equipped with **USB** interface that allows both the communication in real-time with a PC and the recharge of the internal long-lasting and great reliability battery (Li-Ion).

In addition to the direct reading of the measurements, it is possible to detect PEAKS, block the measurement on the display thanks to the HOLD function and through the internal DATA LOGGER it is possible to record up to 130.000 measurement at programmed intervals or manually through the REC button.

On request, as an **OPTION** it is possible to integrate a **WIRELESS** interface that allows to communicate with PC, TABLET or PLC in real time.

#### Typical Applications:

Calibration of materials test machines, test benches, pressure tester, pressure switch etc.

Quality controls in the production lines, calibration and test laboratories.

Compression and tension tests on springs.

Tests of frictions, cable terminal tearing, rivets etc.

Test of lockup on both packing and protection devices.

Test on welding of electronic components.

Test of opening and closing of both manual and automatic doors.

Test of the handling of both manual and automatic loads.

Test on filters, loss and vacuum tests, analysis of pressures variation in the time.

Wireless monitoring of hanging loads, mobile weighing.

Environmental pressure monitoring. (Barometer)

Calibration of: release and direct reading torque keys, screw drivers.

Monitoring of cracks through displacement transducers in the building industry.

**Pressure**  
**Force**  
**Torque**  
**Displacement**  
**in your**  
**HANDS**



Alta Affidabilità



High Reliability

ACCURATEZZA

$\leq \pm 0.01\%$

ACCURACY

Risoluzione STANDARD

$\pm 50.000$  div  
STANDARD Resolution



Stabilità a  
lungo termine  
Long term  
high stability





## Available combinations:



With internal sensor to measure **FORCE** and **WEIGHT** in compression and tension in ranges from 10N (1kg) up to 5kN (500kg)

With external sensors <sup>(1)</sup> such as load cells or force transducers with standardized ranges up to 500 t (5000kN)



With internal sensor to measure: the **VACUUM**, a relative, absolute or differential **PRESSURE** in gas (NO liquids), with ranges from 100mbar up to 5bar (1.5 a 70psi).

With external sensors <sup>(1)</sup> such as TP16 or TP1 models to measure higher pressures with standardized ranges up to 2000bar (29000psi) suitable for both gas and liquids.



With **external**<sup>(1)</sup> sensors such as TRX, TRS, RT2, uTOR models to measure static or dynamic **TORQUES** with standardized ranges from 1 up to 5000 Nm.

Possibility of recording continuous **PEAKS** in clockwise and anticlockwise direction at high speed, 4.8kHz.

Possibility of recording **1° PEAK** with programmable threshold to test torque keys.



With **external**<sup>(1)</sup> sensors such as LDT model to measure the **DISPLACEMENT** with standardized ranges from 5 up to 100 mm.



*Wireless*



**STAR** can be manufactured on **REQUEST** equipped with the **WIRELESS** transmission, which allows to transmit the data directly to a PC and to **TABLET** or a **PLC**.

By using WinWIMOD software it is possible to create a **NETWORK** with up to 32 units, the net can consist of both **STAR** instruments and sensors interfaced with **WIMOD**.

(1) STAR automatically recognizes a max. number of 7 transducers alternatively connected, by **Auto Configuring** itself with the dedicated parameters (Measurement unit, Filter, Resolution). It is possible to connect different sensors to perform measurements of **FORCE**, **WEIGHT**, **PRESSURE**, **TORQUE** and **DISPLACEMENT**.



## **Main characteristics:**

**PRESSURE** internal sensor **ACCURACY: 0.10% F.S.** (ON REQUEST 0.05% F.S.)

**FORCE** internal sensor **ACCURACY: 0.05% F.S.**

**External channel ACCURACY: 0.01% F.S.**

REFERENCE temperature 23°C, Service temperature from 0 to +50°C

Temperature effect (10°C): on zero  $\leq \pm 0.01\%$ , on full scale  $\leq \pm 0.01\%$

**External INPUT** signal 2mV/V (350 or 700Ω 4 wires system) 5Vdc power supply

Standard resolution  $\pm 50.000$  divisions at 2mV/V

HIGH RESOLUTION (128x64 dots) LCD graph **DISPLAY** with 3 levels of backlighting to adapt itself to any conditions of external brightness and with the possibility of rotating the visualization of 180°.

**AUTOMATIC** recognition of FORCE, WEIGHT, VACUUM, PRESSURE, TORQUE and DISPLACEMENT external transducers (max. 7)

Programmable **MEASUREMENT UNIT:**

FORCE and WEIGHT: kg - g - t - N - daN - kN - MN - lb - klb

PRESSURE: bar-mbar-psi-MPa-kPa-Pa-mH<sub>2</sub>O-inH<sub>2</sub>O-kg/cm<sup>2</sup>-mmHg-cmHg-inHg-atm

TORQUE: Nm - Nmm - kgm - kNm - in.lbf - ft.lbf - gcm - kgmm

LENGTH: mm - inch

**DIGITAL CALIBRATIONS** protected by Password with full scale programming or with the "LINEARIZATION by points" of transducers, for every transducer it is possible to separately calibrate both the positive and the negative field. (Example: Tension and Compression)

**DATALOGGER** allows to memorize measurements and to keep them in the internal memory even in case of instrument switching off. (max. 130.000 recordings)

Recording can be performed either in **AUTOMATIC mode** by programming an interval of time (from 0.1 sec up to 24 hours) or in **MANUAL** mode through the REC button.

The data can be then showed on the display or downloaded through the powerful software Quick Analyzer for creating graphs, exports in Excel, printing of reports etc.

Programmable **RESOLUTION.**

Digital **FILTER** and **CONVERSIONS per SECOND** (from 5 to 4800) programmable

**ZERO** function that allows to instantly set to zero the measurement.

**HOLD** function that allows to temporarily "freeze" the measurement to be able to analyze it.

**PEAK** function (positive e negative).

Li-Ion internal battery which ensures a 24 hours **AUTONOMY** when backlighting is activated.

In DATALOGGER mode by setting a recording every 5 min. it is possible to perform recordings for approx. 100 hours without recharging the instrument.

**AUTO POWER OFF** programmable function from 1 up to 99 minutes

**CLOCK** function (hours, minutes) and internal **CALENDAR** (day, month).

Serial communication through **USB** port, **WIRELESS** data Transmission (ON REQUEST).

Protection grade (EN 60529) **IP40**, case made of painted **ALUMINUM**, **WEIGHT** ~ 0.7kg



## Purchase codes:

STAR	INTERNAL sensor		WIRELESS transmission
<b>ABSOLUTE PRESSURE (Barometer)</b>	500 mbar	<b>500MBARA</b>	<b>W</b>
	1 bar	<b>1BARA</b>	
	2.5 bar	<b>2.5BARA</b>	
	5 bar	<b>5BARA</b>	
<b>RELATIVE PRESSURE</b>	100mbar	<b>100MBAR</b>	
	500 mbar	<b>500MBAR</b>	
	1 bar	<b>1BAR</b>	
	2.5 bar	<b>2.5BAR</b>	
<b>RELATIVE PRESSURE VACUUM</b>	100mbar	<b>100MBARV</b>	
	500 mbar	<b>500MBARV</b>	
	1 bar	<b>1BARV</b>	
	2.5 bar	<b>2.5BARV</b>	
<b>DIFFERENTIAL PRESSURE</b>	100mbar	<b>100MBARD</b>	
	500 mbar	<b>500MBARD</b>	
	1 bar	<b>1BARD</b>	
	2.5 bar	<b>2.5BARD</b>	
<b>FORCE</b>	5 bar	<b>5BARD</b>	
	10 N	<b>10N</b>	
	25 N	<b>25N</b>	
	50 N	<b>50N</b>	
	100 N	<b>100N</b>	
	250 N	<b>250N</b>	
	500 N	<b>500N</b>	
	1000 N	<b>1KN</b>	
3000 N	<b>3KN</b>		
5000 N	<b>5KN</b>		

## Included accessories:



Travelling case made of ABS



Charger with USB cable

## Examples:

<b>STAR</b>	NO INTERNAL sensor • EXTERNAL input max. 7 sensors • USB output
<b>STARW</b>	NO INTERNAL sensor • EXTERNAL input max. 7 sensors • USB output • Wireless transmission
<b>STAR1BAR</b>	INTERNAL sensor 1bar Relative • EXTERNAL input max. 7 sensors • USB output
<b>STAR100NW</b>	INTERNAL sensor 100N • EXTERNAL input max. 7 sensors • USB output • Wireless transmission

## PRESSURE internal sensor resolution:

bar		mbar		psi		MPa		kPa		Pa		mH2O	
FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.
0.1000	0.0001	100.00	0.01	1.4500	0.0001	0.0100	0.0001	10.000	0.001	10000	1	1.0000	0.0001
0.5000	0.0001	500.00	0.10	7.2000	0.0010	0.0500	0.0001	50.000	0.005	50000	5	5.0000	0.0005
1.0000	0.0001	1000.0	0.1	14.500	0.0001	0.1000	0.0001	100.00	0.01	100000	10	10.000	0.001
2.5000	0.0005	2500.0	0.5	36.200	0.005	0.2500	0.0001	250.00	0.05	250000	50	25.500	0.005
5.0000	0.0005	5000.0	0.5	72.500	0.005	0.5000	0.0001	500.00	0.05	500000	50	51.000	0.05

inH2O		Kg/cm2		mmHg		cmHg		inHg		Atm	
FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.
40.000	0.005	0.1000	0.0001	75.00	0.01	7.500	0.001	3.0000	0.0002	0.1000	0.0001
200.00	0.02	0.5000	0.0001	375.00	0.05	37.500	0.005	14.500	0.002	0.5000	0.0001
400.00	0.05	1.0000	0.0001	750.0	0.1	75.00	0.01	30.000	0.002	1.0000	0.0001
1000.00	0.10	2.5500	0.0005	1900.0	0.2	190.00	0.02	75.00	0.01	2.5000	0.0002
2000.0	0.2	5.0000	0.0005	3750.0	0.5	375.00	0.05	145.00	0.02	5.0000	0.0005

Limit pressure: 150% Full scale.

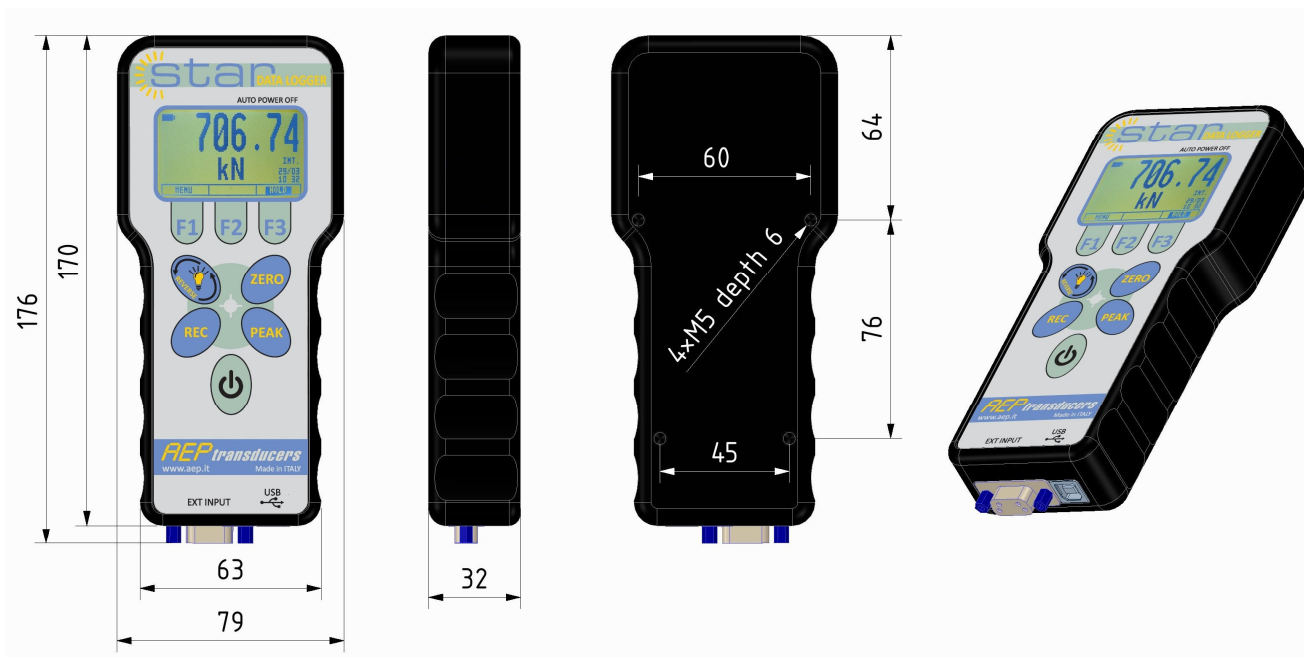


### FORCE internal sensor resolution:

N		daN		kN		kg		g		lb	
FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.	FS	Ris.
10.000	0.005	1.0000	0.0005	0.0100	0.0005	1.0000	0.0005	1000.0	0.5	2.2000	0.001
25.000	0.005	2.5000	0.0005	0.0250	0.0005	2.5000	0.0005	2500.0	0.5	5.5000	0.001
50.000	0.005	5.0000	0.0005	0.0500	0.0005	5.0000	0.0005	5000.0	0.5	11.000	0.001
100.00	0.05	10.000	0.005	0.1000	0.005	10.000	0.005	10000	5	22.000	0.01
250.00	0.05	25.000	0.005	0.2500	0.005	25.000	0.005	25000	5	55.000	0.01
500.00	0.05	50.000	0.005	0.5000	0.005	50.000	0.005	50000	5	110.00	0.01
1000.0	0.5	100.00	0.05	1.0000	0.0005	100.00	0.05	/	/	220.00	0.1
3000.0	0.5	300.00	0.05	3.0000	0.0005	300.00	0.05	/	/	660.00	0.1
5000.0	0.5	500.00	0.05	5.0000	0.0005	500.00	0.05	/	/	1100.0	0.1

Limit force: 150% Full scale.

### Dimensions (mm):



**AEP transducers**



DASA-RÄGISTER  
EN ISO 9001:2015  
IQ-1100-01

**ACCREDIA**  
L'ENTE ITALIANO DI ACCREDITAMENTO

LAT N° 093  
**Calibration Centre**  
The products are NOT  
covered by accreditation

**ATEX**

Production Quality  
Assurance Certified n°  
TÜV CY 17 ATEX 0205891 Q

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