

**DFI2** is a new concept microprocessor based digital indicator, totally autonomous and with input for strain gauges based load cells and force transducers with signal from 0.5 to 4.5 mV/V, suitable for both compression and tension measurements.

Ideal for use in the most modern static and dynamic measurement systems such as material testing machines, test benches, presses for molding, testing systems and automation in general.

Accuracy  $\leq \pm 0.02\%$  makes it possible to use it even within quality systems as a first or second line sample periodically calibrated in accredited laboratories.

The indicator is made up of a microprocessor, a particularly stable long-term analog section and a 24-bit A/D converter which guarantees a resolution of 50,000 divisions at 2mV/V with an acquisition frequency in PEAK mode of 10 acquisitions per second.

In addition to indicating the measurement, the DFI2 is assisted by a programming menu, which allows you to customize the setting of the instrument to better adapt to each application, in particular you can adjust the resolution, the digital filter, the unit of measurement, the PEAK mode operation etc ...

To increase the ease of use and make the instrument completely autonomous, DFI2 is powered by an internal Li-Ion rechargeable battery via the USB port and the included power supply or simply by connecting it to a PC.


Battery life can be extended by using the AUTO POWER OFF function which intervenes when no measurement changes are detected for a programmable time from 1 to 30 minutes.

The display also shows an analogue indication bar for pressure, that is still on, even in programming menu.

DFI2 can work in two different ways:

- **Direct reading** that allows you to view the strength or weight in real time at high resolution.
- **PEAK mode** which displays the maximum force or weight measured, ideal for performing specimen break tests



### Main features:

- 80 HOURS AUTONOMY WITHOUT RECHARGING
- BATTERY RECHARGE THROUGH USB PORT
- LCD DISPLAY with BACK LIGHT
- CONVERSION IN 6 MEASUREMENT UNITS
- PROGRAMMABLE RESOLUTION
- PROGRAMMABLE DIGITAL FILTER
- ZERO and AUTO ZERO FUNCTION
- PEAK FUNCTION (compression and tension)
- AUTO POWER OFF FUNCTION
- USB COMMUNICATION PORT
- MENU LOCK FUNCTION 
- SEPARATE CALIBRATIONS FOR COMPRESSION AND TRACTION
- DATALOGGER WITH CALENDAR (opzione)
- RS232 COMMUNICATION PORT(opzione)

To complete the measurement system, different types of load cells and force transducers are available with measuring ranges from 1 kg (10N) to 500 ton (5MN), and a series of software dedicated to the analysis or calibration of test machines materials and test benches.

All measurement systems can be equipped with an ACCREDIA Calibration Report or Certificate.

## Technical data

ACCURACY CLASS	$\leq \pm 0.020 \%$
LINEARITY ERROR	$\leq \pm 0.015 \%$
INPUT SIGNAL	from 0.5 to 4.5 mV/V
CONNECTABLE LOAD CELLS	N° 1 350 $\Omega$ or 700 $\Omega$ (4 wires)
LOAD CELL EXCITATION	3V $\pm$ 3%
INTERNAL RESOLUTION	24 bit (2.000.000 div)
STANDARD RESOLUTION (2mV/V)	$\pm$ 50.000 div
READINGS PER SEC. (0 filter) in <b>DIRECT READING</b>	10 Hz
REFERENCE TEMPERATURE	+23 °C
WORKING TEMPERATURE RANGE	0 / +50 °C
STORAGE TEMPERATURE RANGE	-10 / +60 °C
RELATIVE HUMIDITY	< 90 % non condensed
TEMPERATURE EFFECT (1°C):on zero	$\leq \pm 0.015\%$
TEMPERATURE EFFECT (1°C):on full scale	$\leq \pm 0.005\%$
Custom LCD DISPLAY CHARACTER HEIGHT 13 mm PROGRAMMABLE LIGHTING from 1 to 60 seconds BLUE LED LIGHTING BAR ANALOG INDICATION	
PROG. MEASUREMENT <b>RESOLUTION</b> PROGRAMMABLE <b>DIGITAL FILTER</b> <b>ZERO</b> and <b>AUTO ZERO</b> FUNCTION <b>PEAK</b> FUNCTION <b>AUTO POWER OFF</b> FUNCTION <b>MENU LOCK</b> FUNCTION 	1, 2, 5, 10 from 0 to 5 Enabled up to 100% F.S. COMPRESSION and TENSION from 1 to 30 minutes Programming protection
<b>CALIBRATION</b> with <b>FULL SCALE</b> <b>CALIBRATION</b> with <b>mV/V PROGRAMMING</b>	Compression and tension from 0.5 to 4.5 mV/V

<b>CALIBRATION with POINTS LINEARIZATION</b>	5 points in comp. + 5 points in tension
UNITS OF MEASUREMENTS	Kg – t – N – daN – kN - lb
DIGITAL OUTPUT	USB 2.0
CONTINUOUS TRANSMISSION OF MEASUREMENTS	10 measure per second
TRANSMISSION ON REQUEST	on REQUEST or CONTINUOUS
MAXIMUM DISTANCE	5m
INTERNAL BATTERY POWER SUPPLY	Li-Ion 1800mA/h 3.6V RECHARGEABLE
RECHARGEABLE BATTERY	from USB port (5Vdc)
AUTONOMY	~ 80 hours
RECHARGING TIME	~ 8 hours by PC or USB power supply
DEGREE OF PROTECTION (EN 60529)	IP40
METALLIC ENCLOSURE	ALUMINUM
WEIGHT	~ 0.4kg

### Options

The **DATA LOGGER** function allows the measurements taken at programmable time intervals to be stored into the internal memory of the instrument.

Programmable storage frequency	From 1 second to 24 hours
Max storable measurements	130000 records
Internal calendar	Date, hours, minutes, seconds

The stored measurements can then be viewed on the display or downloaded directly to a PC using the **Quick Analyzer Light** software, which allows you to have a graphical representation or to export the data to Excel for a customized analysis.

For each recording, the corresponding measure, date and time are stored.



The **SERIAL RS232 COMMUNICATION** is used as an alternative to the USB output and allows you to connect with a PC, TABLET or PLC up to 15 meters away.

DIGITAL OUTPUT	RS232C
BAUD RATE	9600
TYPE OF TRANSMISSION	on REQUEST or CONTINUOUS
BACK CONNECTOR	Female DB9

### Accessories included



USB power supply  
(5Vdc - 700mA)



USB cable



OPERATING MANUAL and  
DRIVER USB on CD.

## Accessories (to be purchased separately)



Shock-resistant silicon COVER.  
Code: **TCOVQ**

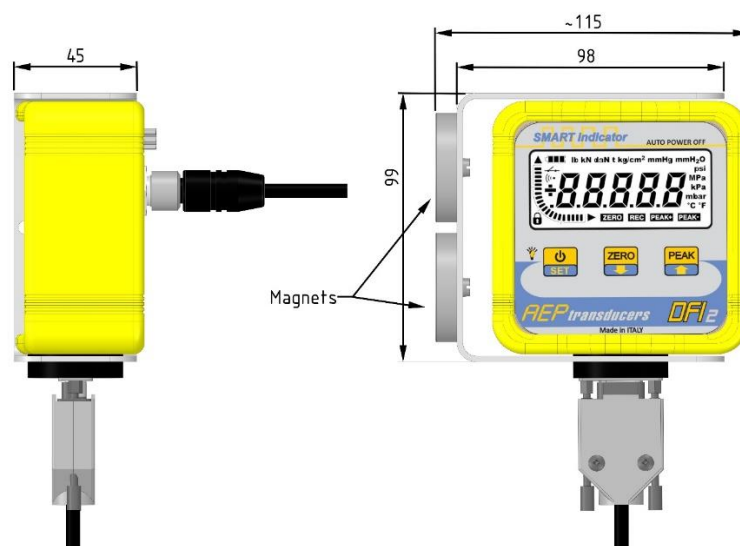


Carrying case.



RS232C serial cable  
code: **TCAVOSERIALE**

## MAGNETIC SUPPORT for fixing on board of the machine Code: **SUPPORTO-DFI2**



ACCREDIA CALIBRATION CERTIFICATE in COMPRESSION and TENSION

Calibration report in COMPRESSION and TENSION (as an alternative to ACCREDIA Certificates)

## Software applications (to be purchased separately)

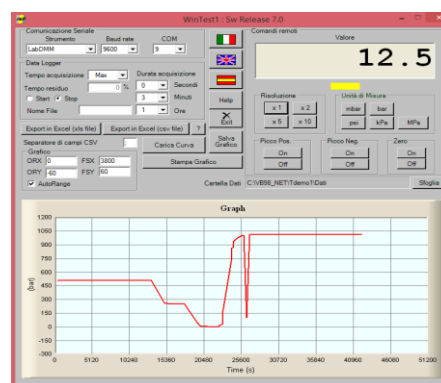
**ForceKAL:** Software dedicated to the calibration and metrological confirmation of torque gauges, wrenches and torque screwdrivers.

The calibration procedure performed is in accordance with the ISO 7500-1 Standard. The evaluation of the calibration uncertainty is carried out according to the requirements of the UNI CEI ENV 13005 Standard.



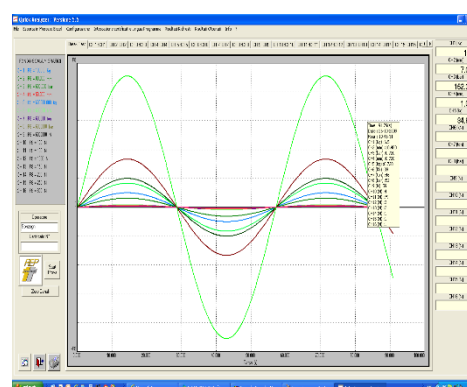
**WinTEST1:** Software that allows to execute the basic commands of the instrument, to create test graphs, export data in Microsoft Excel format, print and archive the tests

Versione **ECONOMICA**.



**Quick Analyzer Light:** Professional software that interfaces directly to DF12, supports the operator in the various tests, analysis, monitoring over time, data storage, direct management of the **DATA LOGGER**, transferring measurements on Microsoft Excel.

Ideal for viewing the torque trend.



## Application examples



DF12 + C2S



DF12 + TCA



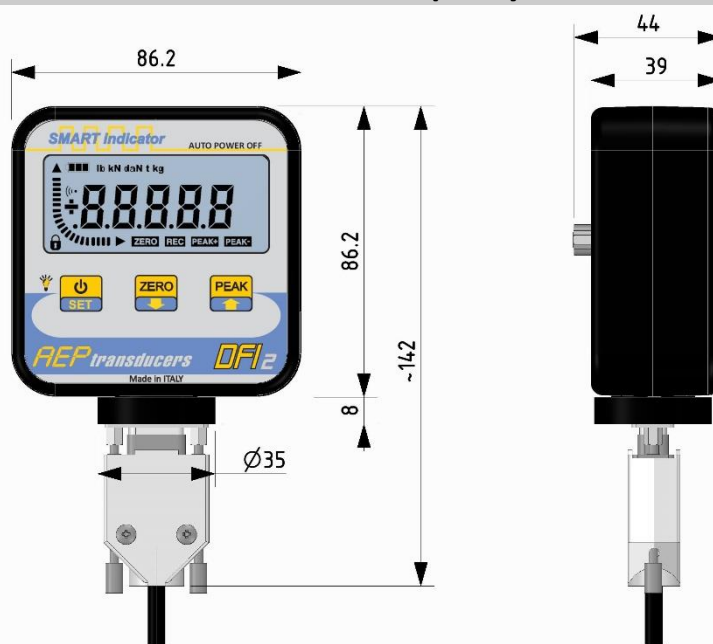
DF12 + TCE



DF12 + TC4



## Dimensions (mm)



## Purchase code

EDF12	Option	Option
	D = Data logger	S = Uscita RS232

Esempio: **E DF12 D**

**AEP transducers**

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