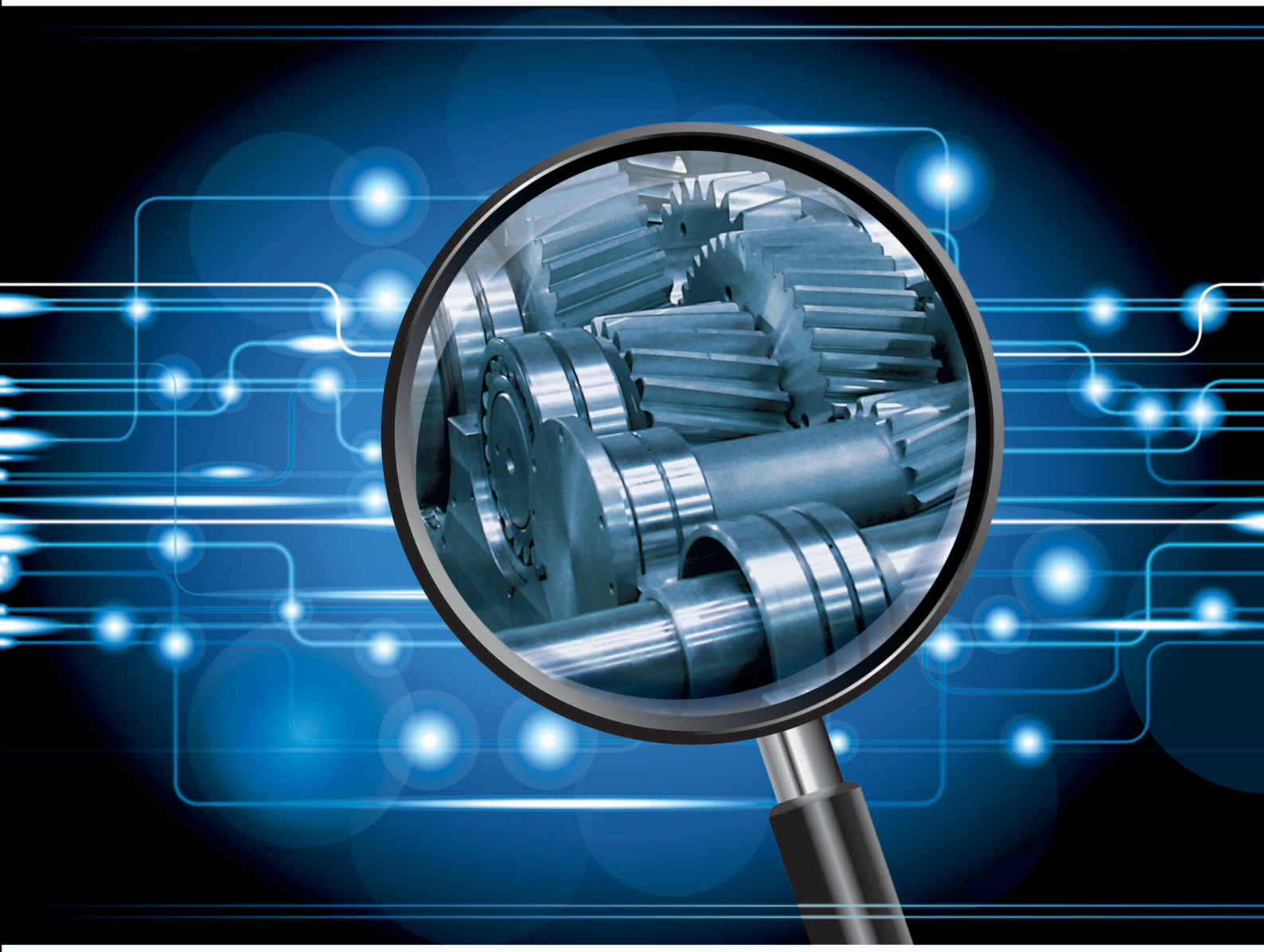
G.P.S. Engineering



STRESS BOX

PREVENTS THE BREAKAGES.

The MONITORING SYSTEM
that allows to intervene on the plants
BEFORE it would be too late.

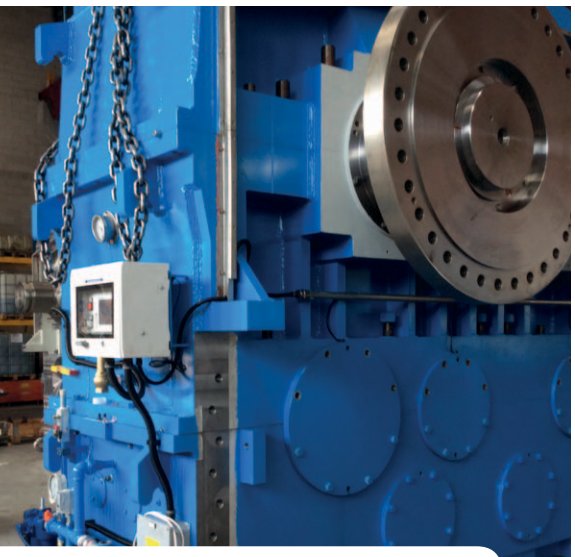
IT MONITORS AND RECORDS

STRESS BOX

It is an innovative and efficient MONITORING SYSTEM THAT WATCHES THE PROCESSES and that records anything that may have an influence on the performances of each mechanical machines designed for power transmission.

When a machine breaks down, it is essential to analyze the causes and to determine which actions should be taken, so that the event will not be repeated. None of this is possible without the data on the physical sizes that precede the incident.

Successfully foreseeing the breakdown of a worm gear is of utmost importance, both in terms of repair costs (replacing a bearing has an irrelevant cost compared to the replacement of one or more damaged gears due to the bearing breaking) and in terms of system down time which, in turn, would lead to a production stoppage costs.



STRESSBOX MONITORS AND RECORDS ON A USB PEN-DRIVE AND IT TRANSMITS VIA SMS AND ETHERNET

IT OPTIMIZES THE COSTS, TIMES AND PROJECTS

STRESS BOX

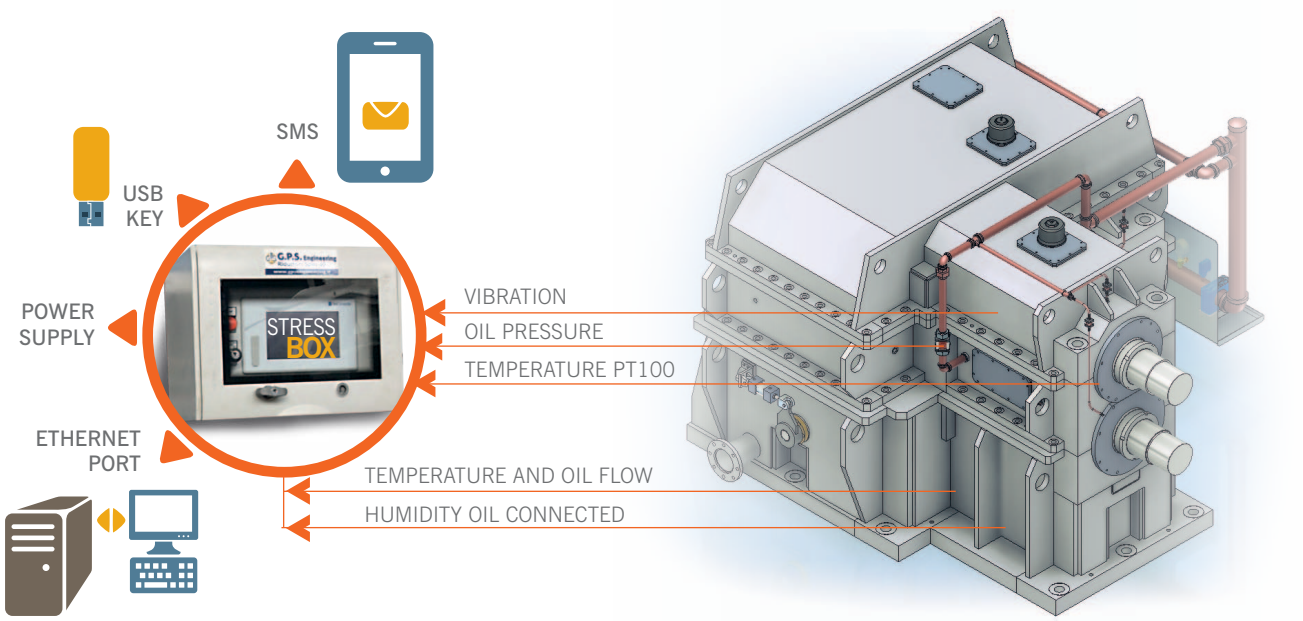
It guarantees to the production responsible, to the maintenance chief and to the designer a new awareness, realising him from complicated and long analysis systems. Therefore, it allows a considerable time and production costs saving.

In the absence of a real knowing of the loads, the designer is “on the side of reason”, over- dimensioning the parts with an inevitable relapse on the machine costs.
The lack of knowing of the conditions and of the working cycle doesn’t allow a repair focused on the making the machine reliable for a production without extraordinary interruption.

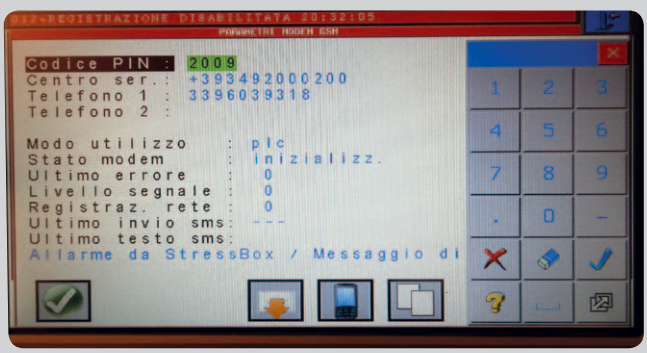
STRESSBOX is the instrument able to resolve these lacks, in an economical way. It gives all the necessary data in order to determine the loads, to project the cycle correctly and to avoid the necessity of overrating the plant.

STRESSBOX is able to acquire and record on a common USB stick different sizes, among them there are:

- Couples
- Speed
- Temperatures
- Pressures
- Shifting
- Lubricant contamination (water)
- Vibration



STRESSBOX is able to **transmit every data acquired by internet and GSM net**. It resolves, for example, all the problems connected to the safety during the test run or it allows to monitor at a distance, what you desire.



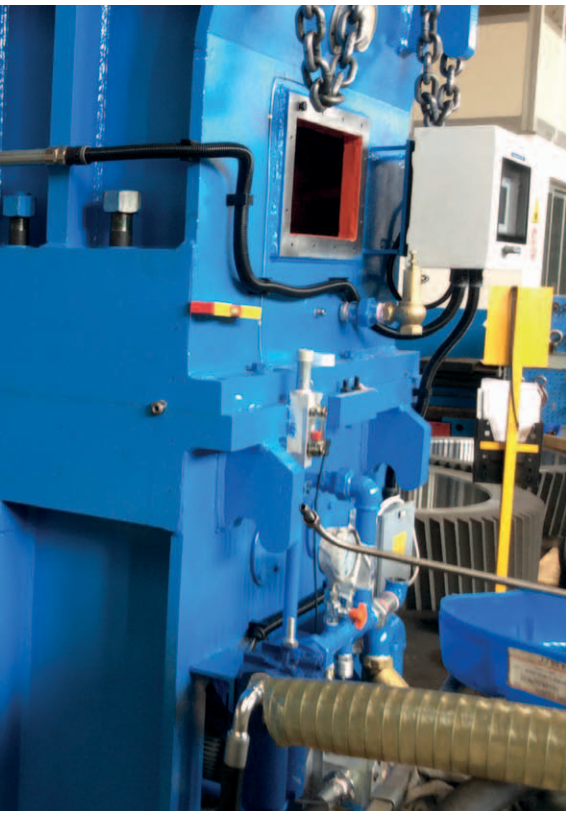
IT ALERTS WITH SMS

STRESS BOX

It can operate for short periods even without electricity supply system. For example, one of the optional features includes an SMS text message blackout alert.

Through a good intense sensors series and a functional optional, it's possible to realise an undeniable simple and complete **monitoring system**. For the company that uses the stress box, it's possible to reduce the maintenance costs, because they could be redirected to the central points of the production chain.

STRESSBOX can notify via **SMS** text message that the alert threshold has been exceeded, thereby it allows the user to **intervene on the system before it would be too late**.



FUNCTIONS

- Recording of data on USB key (8Gb – CSV format) up to 12 times/minute for a key duration of one year;
- Each input can be alarmed by the user;
- The SMS text contains the sensor and the value which has generated the alarm;
- Up to 7 PT100 probes, 7 analog inputs (4-20mA) and 8 digital inputs can be managed;
- Up to 8 digital output can be configured by the user (for example, to command a warning light or a siren when the torque has reached the set value);
- An SMS can be sent when the electrical power has been disconnected;
- An SMS can be sent weekly to detect the full activity of the Stress Box.

SPECIFICATIONS

- Electricity supply: 220 VAC (optional 110 VAC or 24VDC);
- Display: 5,7" Color Touchscreen;
- Operational temperature range: 0-50°C;
- Protection rating: IP65.

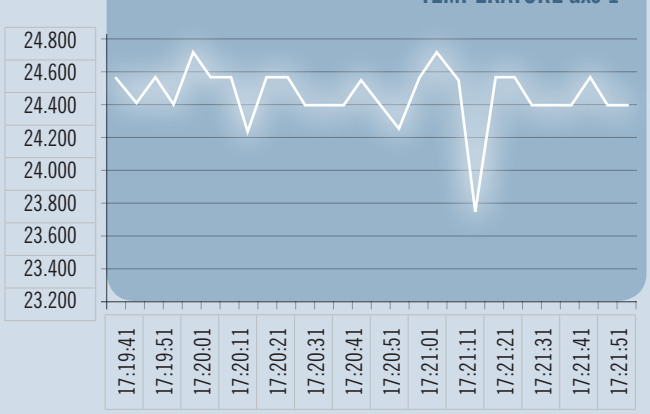
STRESSBOX CAN OPERATE FOR SHORT PERIODS EVEN WITHOUT POWER SUPPLY SYSTEM

IT DOCUMENTS WITH GRAPHICS AND TABLES

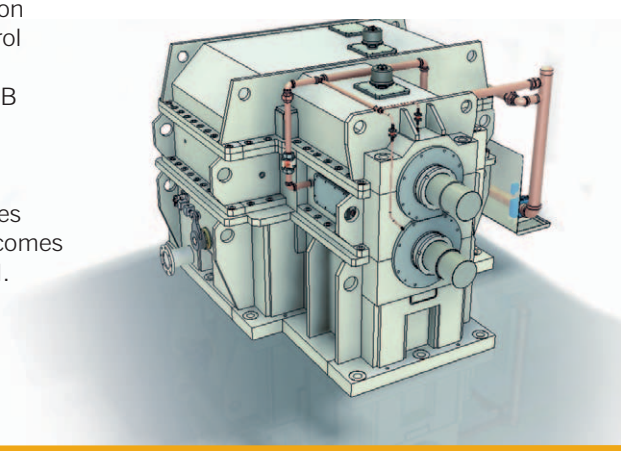
STRESSBOX *REPORT*

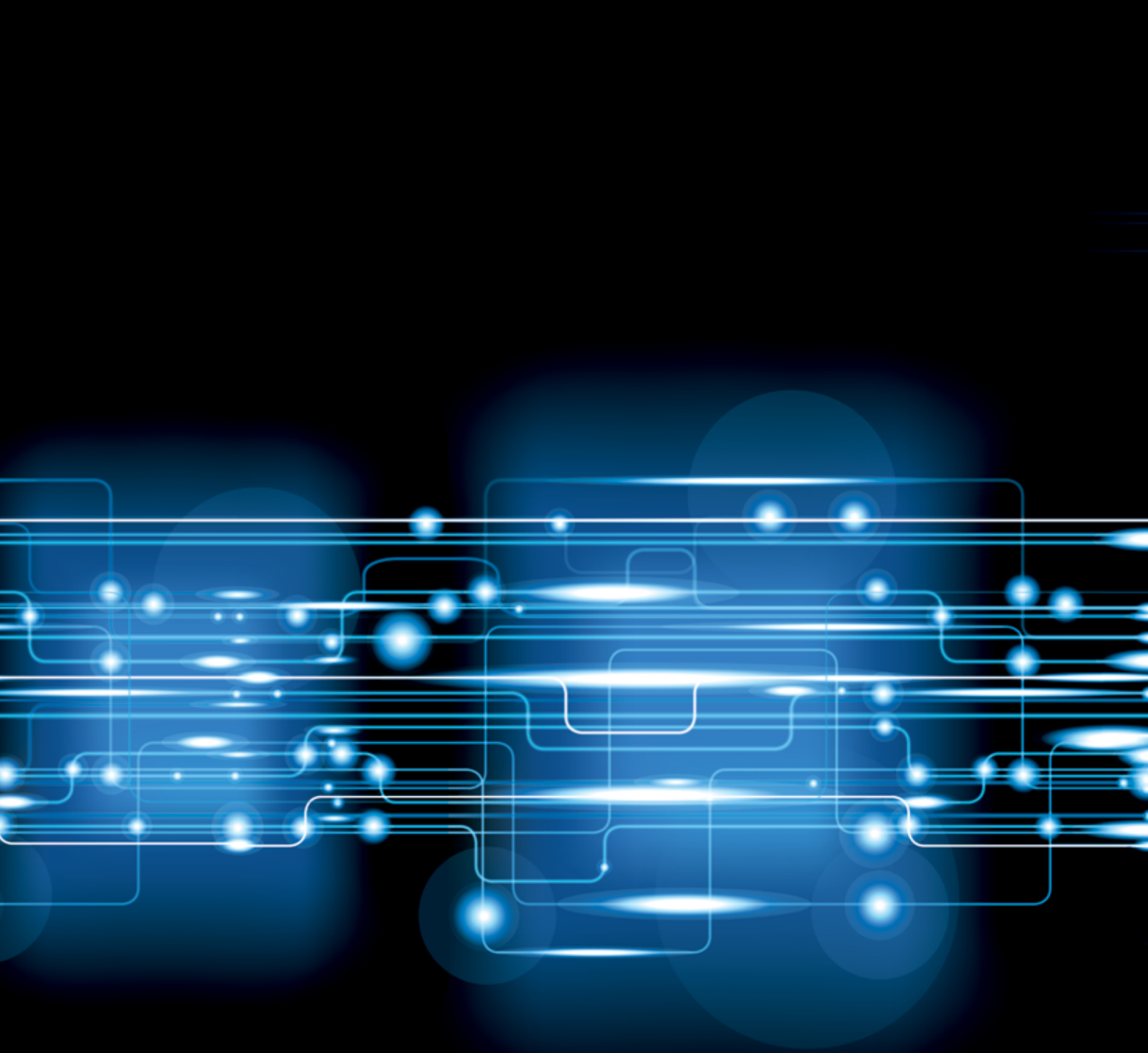
Date	Time stamp	Temperature (°C)					Vibration axe 1 (mm/s)	Oil level (On/Off)	Speed input shaft (rpm)	Motor torque (Nm)	Oil humidity (%H2O)	Oil pressure (bar)	Motor speed (rpm)
		axe 1	axe 2	axe 7	axe 4	oil							
03/06/14	17:19:41	24.560	23.920	25.720	23.120	22.158	0.115	On	425	3200	73.260	2.575	1487,5
03/06/14	17:19:46	24.400	23.600	25.720	23.120	23.337	0.109	On	425	3225	72.220	2.590	1487,5
03/06/14	17:19:51	24.560	24.080	25.560	23.280	23.337	0.102	On	425	3217	73.847	2.590	1487,5
03/06/14	17:19:56	24.400	23.760	25.560	23.280	22.548	0.115	On	425	3201	73.407	2.575	1487,5
03/06/14	17:20:01	24.720	23.920	25.720	23.280	23.532	0.102	On	425	3200	72.667	2.590	1487,5
03/06/14	17:20:06	24.560	23.920	25.560	23.600	23.532	0.102	On	425	3150	73.700	2.575	1487,5
03/06/14	17:20:11	24.560	23.920	25.560	23.120	22.353	0.102	On	425	3190	73.407	2.575	1487,5
03/06/14	17:20:16	24.240	24.080	26.240	23.120	23.142	0.102	On	425	3210	72.367	2.590	1487,5
03/06/14	17:20:21	24.560	24.240	25.560	23.280	24.126	0.115	On	425	3200	73.553	2.575	1487,5
03/06/14	17:20:26	24.560	23.920	26.720	23.280	22.947	0.121	On	425	3250	73.553	2.575	1487,5

STRESSBOX *TEMPERATURES graphic*



STRESSBOX is a system for a permanent monitoring and for the registration of an analogic and digital entry series of various type, which is able to control different physical quantity (temperatures, vibrations, speed...).
The values of these physical quantities are read and saved in a file on a USB pen-drive with a pre-set frequency (to 1 up to 60 seconds).
These files, in CSV format, can be important and read by every pc.
The state of the system and the values of the monitored sizes are visualised on a display with a light coloured graphics (**green**=values ok; **yellow**=values of attention; **red**=freakish values - **alarm**). When a value reaches and overcomes a critical value (red) an SMS can be sent through the modern optional GSM.
The system, normally powered by electricity, provides a temporary battery to secure the data storage and to avoid interruptions in the registration.





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