

HYDAC INTERNATIONAL

Portable Data Recorder HMG 2500

3.5" Colour Display
Up to 4 sensors can be connected
Automatic Sensor Detection

Description:

The HMG 2500 is an impressive, top performance portable measurement and data acquisition.

Automated setting procedures, a simple, self-explanatory operator guide and many comprehensive functions ensure the operator is able to carry out a wide range of measurement tasks within a very short time.

This makes the HMG 2500 an ideal companion for employees in maintenance, commissioning and service.

The device is designed primarily to record pressure, temperature and flow rate values which are the standard variables in hydraulics and pneumatics.

For this purpose, special sensors are available. The HMG 2500 recognises the measured variable, measuring range and the unit of these sensors and automatically carries out the basic device settings accordingly.

In addition to this, the HMG 2500 has a digital input, e.g. for frequency or speed measurement, as well as a virtual measurement channel for the measurement of difference or performance.

Due to the wide range of functions and its simple handling, the HMG 2500 is just as appropriate for users who take measurements only occasionally as it is for professionals for whom measuring and documentation are routine.

The update capability of the HMG 2500 ensures that the user can benefit from future upgrades of the device software.

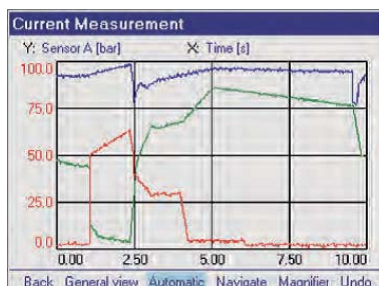


Special features:

- Simple and user-friendly operation
- Practical, robust design
- Large, full colour graphics display
- Quick and independent basic setting by use of automatic sensor recognition
- Up to 4 sensors can be connected simultaneously
- Up to 32 measurement channels can be depicted simultaneously
- Sampling rates up to 0.1 ms
- Very large data memory for archiving measurement curves
- Various measurement modes:
 - Normal measuring
 - Fast curve recording
 - Long-term measurement
- 2 independent triggers, can be linked logically
- Simple sensor connection by means of M12x1 push-pull connector
- PC connection
 - USB
 - RS 232
- Convenient visualisation, archiving and data processing using the HMGWIN software supplied.

Function:

- Clear and graphical selection menus guide the operator intuitively to all the device functions available.
A navigation pad on the keypad ensures rapid operation.
- The HMG 2500 can monitor signals from up to **four sensors simultaneously**. For this there are 4 robust standard input sockets.
- The following sensors can be connected to 3 of these input sockets:
 - 3 analogue sensors (e.g. for pressure, temperature and flow rate) with the special digital HSI interface (HYDAC Sensor Interface); this means the basic device settings (measured variable, measuring range and unit of measurement) are undertaken automatically
 - 3 Condition Monitoring sensors ¹⁾ (SMART sensors); again, the basic device settings are carried out automatically
- Frequency measurements, counter functions or triggers for data logging can be implemented via the fourth input socket with one digital input.
- Additionally, the HMG 2500 has a virtual measurement channel. The virtual measuring channel enables a differential measurement or a performance measurement by means of the sensors connected to the measurement channels "A" and "B".
- All input channels can operate simultaneously at a **sampling rate** of 0.5 ms (1.0 ms for SMART sensors). For the recording of highly dynamic processes, a sampling rate of 0.1 ms can be achieved.
- The most impressive function of the HMG 2500 is without doubt its ability to record dynamic processes as a **measurement curve** "online", i.e. in real-time, and to render them as graphs in the field.



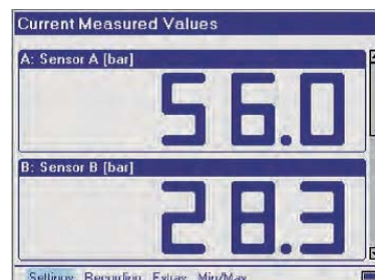
- The **data memory** for recording curves or logs can hold up to 500,000 measured values per recording. Over 100 of such data recordings in full length can be stored in an additional archiving memory.
- For specific, **event-driven curves or logs**, the HMG 2500 has two independent triggers, which can be linked together logically.
- User-specific device settings can be stored and re-loaded at any time as required. This means that repeat measurements can be carried out on a machine again and again using the same device settings.

Load Stored Settings

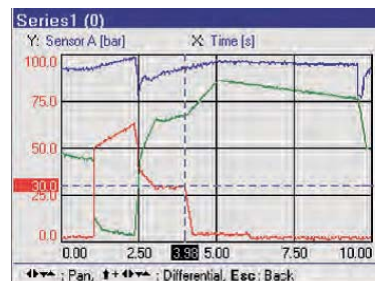
Name	Savedt
power unit 10	28.06.06 12:44:58
injection machine 17	28.06.06 12:44:41
hydraulic press	28.06.06 12:43:04
power unit	28.06.06 12:42:03
injection machine 12	28.06.06 12:41:14

Load Cancel

- Measured values, curves or texts are visualised on a **full colour graphics display** in different selectable formats and display forms.



- Numerous useful and easy-to-use **auxiliary functions** are available, e.g. zoom, ruler tool, differential value graph creation and individual scaling, which are particularly for use when analysing the recorded measurement curves.



- The HMG 2500 communicates with a PC via the built-in USB interface or RS 232 interface.

¹⁾ SMART sensors (Condition Monitoring sensors) are a generation of sensors from HYDAC which can provide a variety of different measured variables.

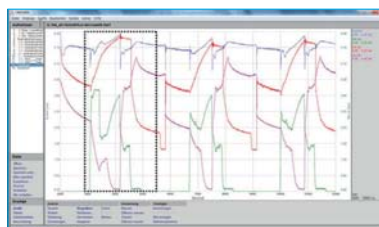
HMGWIN:

The PC software HMGWIN is also supplied with the device. This software is a convenient and simple package for analysing and archiving curves and logs which have been recorded using the HMG 2500, or for exporting the data for integration into other PC programs if required. In addition it is possible to operate the HMG 2500 directly from the computer. Basic settings can be made, and measurements can be started online and displayed directly on the PC screen in real-time as measurement curves progress.

HMGWIN can be run on PCs with Windows Vista / XP / 2000 and Windows 7, 8.1 and 10 operating systems.

Some examples of the numerous useful additional functions:

- **Transfer and archiving** of measurements recorded using the HMG 2500
- Display of the measurements in graph form or as a table



- **Zoom function:**
Using the mouse, a frame is drawn around an interesting section of a measurement curve, which is then enlarged and displayed.

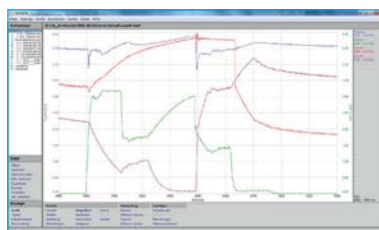
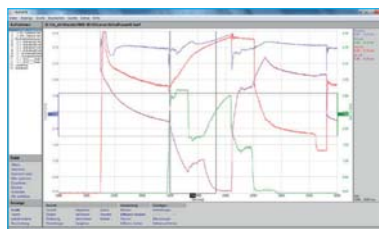
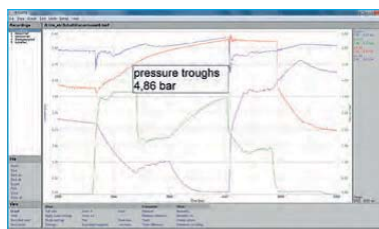


Fig.: Zoomed section of measurement curve

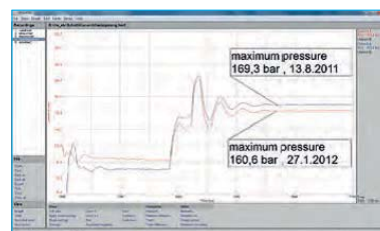
- **Accurate measurement** of the curves using the ruler tool (time values, amplitude values and differentials)



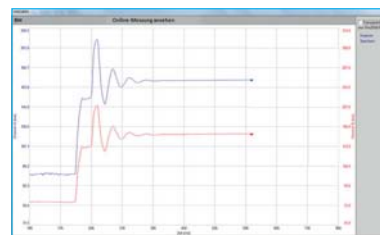
- Individual **comments** and measurement information can be added to the graph.



- **Overlay** of curves, for example to document the wear of a machine (new condition/current condition)



- Using mathematical operations (calculation functions, filter functions), new curves can be added.
- **Snap-shot function:**
Comparable to the function of a digital camera, a picture can be taken immediately of any graph and saved as a jpg file.
- A professional measurement report can be produced at the click of a mouse:
HMGWIN has an automatic layout function. Starting with a table of contents, all recorded data, descriptions and graphics and/or tables are combined into a professional report and saved as a pdf file.
- **Online function (HMGWIN only):**
Starting, recording, and online display of measurements (similar to the function of an oscilloscope)



- Change of axis assignment of the recorded measurement parameters in graph mode (e.g. to produce a p-Q graph)

Technical data:

Analogue inputs	
Input signals	HYDAC HSI analogue sensors
3 channels M12x1 Ultra-Lock flange sockets (5-pin) channel A to channel C	HYDAC HSI SMART sensors
Accuracy	$\leq \pm 0.1\%$ FS
Digital input	
1 channel via M12x1 Ultra-Lock flange socket (5-pin) Channel D	Digital status (high/low) Frequency (0.01 to 30,000 Hz)
Calculated channel	
Quantity	1 channel via virtual channel E
Sampling rate (dependent on number of active channels)	0.1 ms, max. 1 input channel
	0.2 ms, max. 2 input channels
	0.5 ms, all 3 input channels 1.0 ms, for Smart sensors
Resolution	12 bit
Memory	Min. 100 measurement curves, each with 500,000 measured values
Display	3.5" colour display 7-segment display
Interfaces	1 USB, 1 serial interface RS 232
CE mark	EN 61000-6-1 / 2 / 3 / 4
Safety	EN 61010
IP class	IP 40
Ambient conditions	
Operating temperature	0 to +50°C
Storage temperature	-20 to +60 °C
Relative humidity	0 to 70%
Dimensions	approx. 244 x 173 x 58 mm (B x H x T)
Weight	approx. 1,100 g

Note: **FS** (full scale) = relative to the full measuring range

Order details:

HMG 2500 – 000 – X

Operating manual and documentation

D = German
E = English
F = French

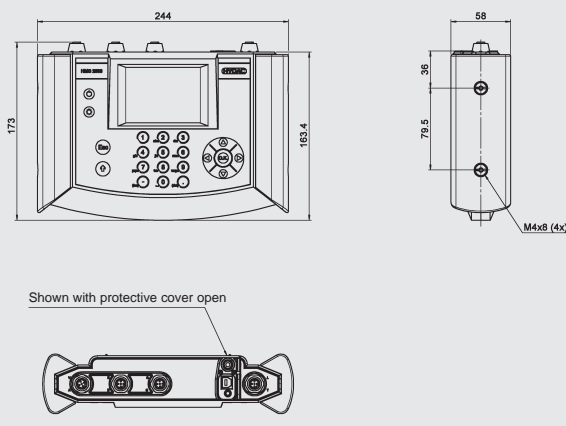
Scope of delivery

- HMG 2500
- Power supply for 90 to 230 V AC
- Operating Instructions
- Data carrier with USB drivers, HMGWIN software
- USB connector cable

Accessories

- Additional accessories, such as electrical and mechanical connection adapters, power adapters, etc. can be found in the "Accessories Service Devices" catalogue section.

Dimensions:



Note:

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

All technical details are subject to change without notice.