WEBTEC

Handheld hydraulic readouts & dataloggers

HPM Series

Hydraulic measurement and control

BFPA The British Fluid Power Association

nqa. ISO 9001 Registered

UKAS QUALITY MANAGEMENT 015

Certificate No.8242

Measure . . .

Automatic sensor recognition

Sensor Recognition (SR)
Sensors use an analogue signal and can be plugged into any suitable input of an HPM handset, which will automatically recognise the type, range and calibration of the sensor. No user input required. Cable lengths should be kept to less than 13m to avoid signal attenuation problems.

Intelligent Digital (ID)
Sensors use a digital CAN protocol with automatic sensor recognition. They are connected in-line with one another using a series of shorter cables and 'Y' connectors. Each sensor is uniquely identified by the HPM handset which will automatically recognise the serial number, type, range and calibration of the sensor. Cable lengths can be up to 50m.

Flow meters (SR & ID)

CT/CTR Series

- Precision turbine flow meters (1% IR) *
- 12 models cover range 1 - 750 lpm, up to 480 bar
- Measure flow and temperature with ID models
- With or without built-in loading valve

Sensors (SR & ID)

Pressure / temperature sensors

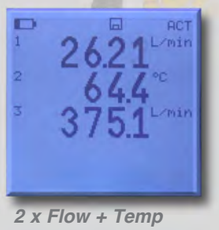
- Pressure transducers rated up to 1000 bar with or without temperature measurement
- Temperature sensor
- Speed sensor
- Current & voltage input converters for custom sensors

* Accuracy quoted for 15-100% of operating range

Display . . .

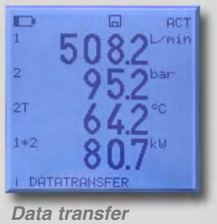
"It has never been easier to analyse a hydraulic circuit. Select from a wide range of hydraulic sensors, the SR and ID technology mean you won't have to enter any sensor details and you can run a test in a matter of minutes..."

HPM4000 screen shots



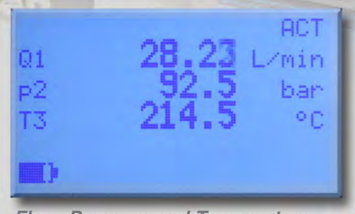
2 x Flow + Temp

Calculated Channel showing Hydraulic Power

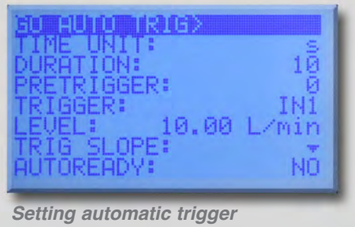


Data transfer

HPM540 screen shots



Flow, Pressure and Temperature



Setting automatic trigger

Data logging mode

HPM6000 screen shots

Readings in Numerical view

Readings in gauge view

Live data shown in curve graph

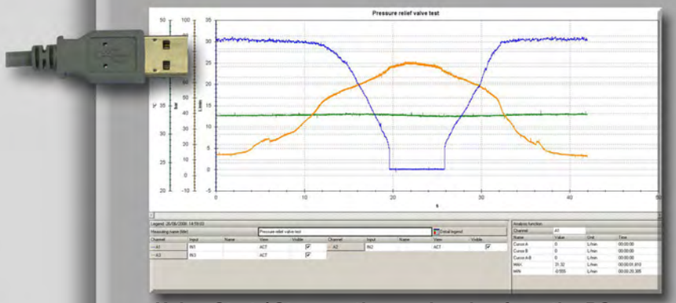
"The three HPM families all enable you to display and data log readings at up to 1000 times a second (10,000 on HPM6000) as well as calculate differential pressure and power..."

Datalog . . .

Analyse . . .

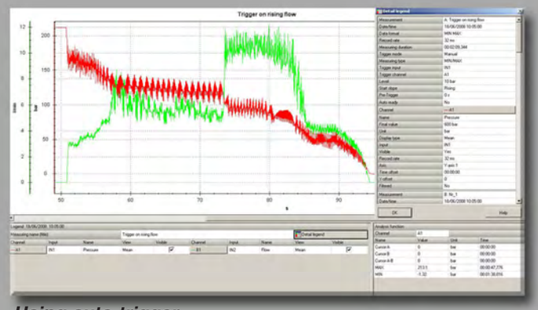
HPMComm analysis software

"Test results can easily be transferred to a laptop or PC for further analysis, sharing with colleagues or printing out. Graphs can be overlaid upon each other for easy comparison. On-screen tools, such as zoom or dual cursors make measuring time-periods very easy."



Using Start / Stop continuous logging from the PC. . .

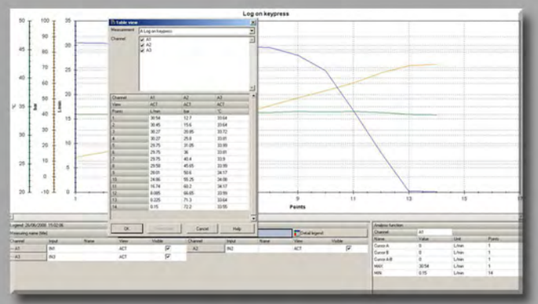
Start / Stop - log at a high speed against time in continuous log mode directly from the HPMcomm software on the PC.



Using auto-trigger. . .

Trigger - Auto trigger at high speed to start data logging when an event occurs, eg: when a pressure goes over a certain level or a trigger is received

Trigger - Manual trigger, press a key when you want the test to begin



Using 'log by point' with actual values shown in a table

Log by point – Log data every time you press a key, ideal for recording data from a test procedure

HPM110 digital pressure gauge

Models available
SR-HPM-110-MT-100
SR-HPM-110-MT-600
SR-HPM-110-UN-1500
SR-HPM-110-UN-8700

HPM110 in use

The HPM110 offers an economical solution to monitoring pressure and peak pressure with a simple visual display. The hand-held unit can be installed when required using a standard test point, or left permanently connected in a system. Since the HPM110 is battery powered it requires no external wiring.

The HPM110 simultaneously displays actual pressure, peak pressure, battery level and the engineering units selected. The back light can be switched on at the press of a button. Using the buttons on the front panel the user can clear the peak value, display min, max and actual pressure, reset the zero point and change the engineering units. The unit is available in four models.

HPM110 showing actual pressure as numeric value and on bar graph

HPM110 showing zero pressure and full scale capability (600 bar)

Features

- **Accuracy** (± 0.5% Full Scale typical)
- **Economically** priced
- **Rugged** design, IP67 rated
- **Digital** display with bar graph
- **Stainless** Steel wetted parts
- **Peak** pressure - 10 ms scan rate
- **Back** lit display

Note: Please see the back page of this brochure for a product comparison table

HPM4000 series hydraulic data loggers

Models available
SR-HPM-4020-05-0C
SR-HPM-4030-05-0C-CAN

HPM4000 Kit

The HPM4000 series is a highly versatile yet low-cost handheld hydraulic test unit that belongs in every engineer's tool box to assist with hydraulic system commissioning and fault-finding.

There are two models in the series, the HPM4020 which allows for two SR sensors to be connected simultaneously, while the HPM4030 allows for three Intelligent Digital (ID) sensors to be connected at the same time, using a CAN protocol. Both models automatically recognise the type and model of sensor connected and automatically configure the display accordingly.

In addition the user can quickly and easily display calculated values such as differential pressure (P1-P2) and hydraulic power (P * Q / Constant).

HPM4030 data logging 3 readings + calculated power

HPM4030 showing two flows and temperature

Features

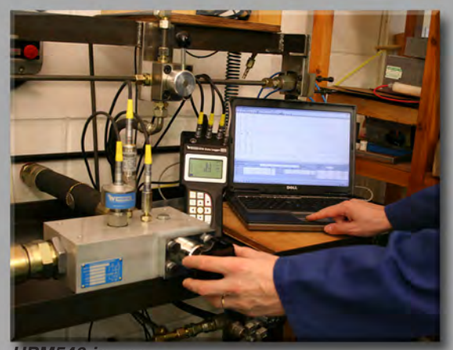
- Use to measure hydraulic flow pressure, temperature and speed (HPM4020 only)
- Perform simple calculations & display on-screen
- Choice of two models – HPM4020 or HPM4030
- Compatible with either SR or ID sensors
- Connect up to 2 or 3 sensors at once (depending on model)
- Display four values on the screen at once
- Large 3.5" back-lit display
- 8 hours of battery life
- HPM4030 rated to IP67 for extreme conditions
- Easy start/stop data logging
- Store 1GB of data on nano-USB stick (max 4GB)
- Easily export data using USB port
- Analyse test results with free HPMComm software
- Create graphs and reports for sharing with customers and colleagues
- Standard and custom kits available

Note: Please see the back page of this brochure for a product comparison table

HPM540 hydraulic data logger

Models available
SR-HPM-540-05-0C

HPM540 customer specific kit



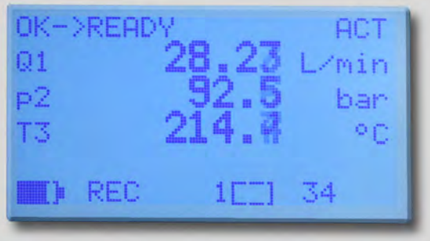
HPM540 in use

The HPM540 is ideal for use as a portable display and data logger as well as for permanent installation on small hydraulic test benches.

Powered by a rechargeable NiMH battery, this easy to use diagnostic test system is a valuable tool for comparative testing as well as preventive maintenance, verifying component settings, pinpointing poor system performance, measuring differential pressure and capturing harmful pressure spikes. Accessories include a wide range of pressure transducers and flow meters as well as temperature and speed sensors. In addition many custom sensors as well as DC, Current or Voltage can be connected with the available external signal modules.

HPM540 displaying flow, pressure and temperature

HPM540 in data logging mode



Features

- Measure and record flow, pressure, temperature, speed plus peak and differential pressure
- Option to connect in other sensors and DC Amp or Volt signals
- Four multi-purpose inputs (8 channels if you measure temperature using PTT pressure transducer)
- Automatic set-up with any Sensor Recognition (SR) sensor
- Data log continuously, auto-trigger or log by point
- Connect to a PC quickly and easily via USB
- Via PC HPMcomm software define 'projects' to simplify repeat tests
- Directly control continuous logging from your PC and graph data in real time
- Analyse data quickly and easily using free HPMcomm software
- Easy operation with menu driven functions
- Store up 1 million values
- Rugged ergonomic design
- Sample Rate 0.25 ms (Input 1) 1 ms (Inputs 2-4)

Note: Please see the back page of this brochure for a product comparison table

HPM6000 series hydraulic data loggers

Models available
SR-HPM-6016-05-0C-CAN
SR-HPM-6116-05-0C-CAN
SR-HPM-6216-05-0C-CAN

HPM6000 customer specific kit

HPM6000 in use

The HPM6000 series of portable hydraulic data loggers offer enormous functionality and great versatility ideal for diagnostic testing complex hydraulic systems, or for use on hydraulic test benches. The HPM6000 is loaded with technology, yet is simple to configure and easy to use.

The series includes three models, the HPM6016, HPM6116 and HPM6216 allowing the hydraulic engineer to choose the model with the right number of inputs for their application and budget. All models of this easy-to-use diagnostic test system provide the engineer with an invaluable data logger for research and development testing, pre-dispatch inspection, preventive maintenance, as well as fault-finding poor system performance and capturing harmful pressure spikes. All units are designed for measuring, displaying, data-logging and exporting hydraulic data for further analysis on a PC.

HPM6000 showing four large numeric values (press down to show additional values)

HPM6000 showing two large dials (press down to show additional values)

Features:

- Three models – HPM6016, HPM6116, HPM6216
- Connect up to 16 Intelligent Digital sensors (each can have up to 2 channels) 10 analogue sensors (each SR sensor can have up to 2 channels)
- Up to 4 million readings per test
- Complete range of sensors – pressure, flow, temperature, tachometer
- Intelligent Digital sensors (CAN protocol) for easier wiring and auto configuration
- Analogue sensor inputs (HPM6116, HPM6216) including HPM-SR range, mA, volts
- Internal storage for over 36 million readings – expandable to over 1 billion readings
- Four modes of data-logging
- Logging interval of 1 ms to 24 hours
- Re-chargeable internal battery – mains charger included
- Full colour 5.7 inch display
- IP64 and rubberised case surround for protection in harsh environments
- Complete with HPComm – PC software
- Connectivity – USB Host, USB slave, Ethernet

Note: Please see the back page of this brochure for a product comparison table

HPM series comparison chart

							
Model number	**SR-HPM-110-##-####**	**SR-HPM-4020-05-0C**	**SR-HPM-4030-05-0C-CAN**	**HPM540-05-0C**	**SR-HPM-6016-05-0C-CAN**	**SR-HPM-6116-05-0C-CAN**	**SR-HPM-6216-05-0C-CAN**
Built-in pressure measurement?	Yes	0	0	0	0	0	0
Sensor recognition?	No	Yes	No	Yes	No	Yes	Yes
Number of SR inputs	0	2	0	4	0	3	6
Intelligent Digital (CAN) compatible?	No	No	Yes	No	Yes	Yes	Yes
Number of ID lines (CAN)	0	0	1	0	2	2	2
Max number CAN sensors per line	0	0	3	0	8	8	8
Use with SR aux input box	No	No	No	Yes	No	Yes	Yes
Native aux analogue inputs (0-10V/ 0-20mA)	0	0	0	0	0	2	4
Total number of sensors that can be connected	1	2	3	4	16	21	26
Digital trigger input / output?	No	No	No	No	Yes	Yes	Yes
Datalogging	No	Yes	Yes	Yes	Yes	Yes	Yes
Datalogging options	N/A	start/stop	start/stop	start/stop, point, manual trigger, auto trigger	start/stop, point, trigger, trigger-logic	start/stop, point, trigger, trigger-logic	start/stop, point, trigger, trigger-logic
Scanning rate	10 ms	1 ms	1 ms	1 ms (0.5 ms IN1)	1 - 4 ms	1 - 4 ms CAN / 1 ms SR / 0.1 ms (Aux1)	1 - 4 ms CAN / 1 ms SR / 0.1 ms (Aux1)
Calculated channels	No	Yes	Yes	Yes	Yes	Yes	Yes
Local memory size (number of records)	One peak pressure	15,000 on one channel	15,000 on one channel	1m points	10 MB	10 MB	10 MB
Type of USB storage?	N/A	Nano	Nano	N/A	USB drive & MicroSD	USB drive & MicroSD	USB drive & MicroSD
Size of USB memory supplied	N/A	1 GB	1 GB	N/A	2 GB MicroSD	2 GB MicroSD	2 GB MicroSD
Max USB memory size	N/A	4 GB	4 GB	N/A	40 GB*	40 GB*	40 GB*
Backlight	Yes	Yes	Yes	No	Yes	Yes	Yes
Display size & type	2" x 1.3" LCD	2.44" x 2.44" LCD	2.44" x 2.44" LCD	2.8" x 1.57" LCD	4.53" x 3.38" TFT-colour LCD	4.53" x 3.38" TFT-colour LCD	4.53" x 3.38" TFT-colour LCD
Max number of channels displayed at once	1	4	4	4	8	8	8
Display using dials	Yes	No	No	No	Yes	Yes	Yes
Display graphs on handset	No	No	No	No	Yes	Yes	Yes
Battery type	2 x 1.5 V alkaline	Lithium Ion (3.7 V DC / 2250 mAh)	Lithium Ion (3.7 V DC / 4500 mAh)	NiMH	Lithium Ion (7.4 V DC / 4500 mAh)	Lithium Ion (7.4 V DC / 4500 mAh)	Lithium Ion (7.4 V DC / 4500 mAh)
Battery life	1500 hours	>8 hours	>8 hours	>8 hours	>8 hours	>8 hours	>8 hours
Battery recharge time	N/A	3.5 hours	7 hours	3 hours	3 hours	3 hours	3 hours
Battery life indicator	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USB output	No	Yes	Yes	Yes	Yes	Yes	Yes
Ethernet output	No	No	No	No	Yes	Yes	Yes
HPMComm compatible?	No	Yes	Yes	Yes	Yes	Yes	Yes
Online data-logging with HPMComm (max)	No	Yes	Yes (5 ms)	Yes (20 ms)	Yes (12 Mbit/s)	Yes (12 Mbit/s)	Yes (12 Mbit/s)
Option to configure handset from HPMComm?	No	Yes	Yes	Yes	Yes	Yes	Yes
IP rating of handset	IP67	IP54	IP67	IP54	IP64	IP64	IP64
Measurement accuracy	+/-0.5% FS (typ)	+/-0.2% FS + 1 digit	N/A	+/-0.2% FS	N/A	+/-0.2% FS (SR/Aux)	+/-0.2% FS (SR/Aux)
Calibration optional?	Yes	Yes	No	Yes	No	Yes	Yes
Max cable lengths	N/A	8 m	50 m +	8 m	50 m +	50 m +	50 m +
Available in custom kits?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weight (handset only)		540g	540g	530g	1550g	1600g	1650g
International options	Available in 100 / 600 bar and 1500 / 8700 psi models	Change engineering units via the menu and language via the HPM Comm software	Change engineering units via the menu and language via the HPM Comm software	Change engineering units via the menu	Change engineering units via the menu and language via the HPM Comm software	Change engineering units via the menu and language via the HPM Comm software	Change engineering units via the menu and language via the HPM Comm software

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