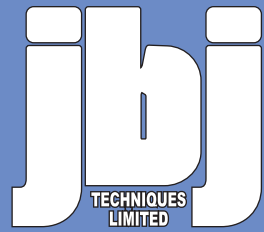


Data Acquisition

for hydraulic & process engineers



Save your process
by prompt action.
Reduce down time.
Save on fuel bills.

now with remote
FD20-GPS
Intelligent control.

System monitor
& data logging

4 Channel
local display

Integrated FD20
COMR software

View real
time data

Spreadsheet
compatible

FD20 Serial Data Logging

FD20

www.jbj.co.uk/fd20.html

Monitoring and logging of line pressure, fluid flow, temperature and much *more* . . .

FD20 Process Readout with data logging

Fd20 SYSTEM MONITOR.

- Inputs to suit a wide range of sensors. <
- Integrated package with easy set up. <
- Local display of process sensors. <
- 12 bit resolution for accurate data capture. <
- 2 alarm relays with no volt contacts. <
- 12 VDC excitation supply to power sensors. <



< System monitor & data logging >

< 4 Channel local display >



VIEW REAL TIME DATA.

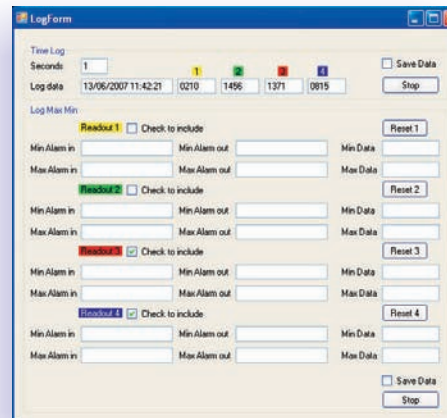
- > 1 to 4 channels.
- > Customise readout to suit process.
- > Indication of max/min & alarm.
- > Set sensitivity and refresh rate to suit.
- > Adjustable time base.
- > Full data logging facility.

< Integrated FD20 COMR software >

< View real time data >

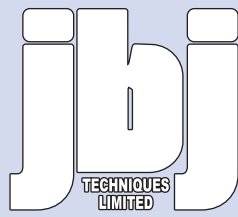
EASY REVIEW OF LOG FILES.

- Sample time from 2 ms. <
- Log data alarms, time in, out and low or high value. <
- Easy review of log files via adaptable graphic views. <
- Zoom on a range of data. <
- Time/date stamp on log events. <
- CSV log files for easy import into 'Excel' spreadsheets. <



< Spreadsheet compatible >

www.jbj.co.uk/fd20.html



The FD20 process readout + FD20

Display

Readout 2 Line x 16 Character
 Colour Green LCD with back light
 Alarm indicators Red LED
 Power on Green LED

Inputs

Types
 Channel D1 Flow meter pulse input
 Channel D2 4-20mA 12Bit transducer* input or thermistor
 Channel D3 4-20mA 12Bit transducer*
 Channel D4 4-20mA 12Bit transducer*
 * to suit temperature, pressure, voltage, etc

Update rate/range

Channel D1 Frequency + 30ms / 0.2Hz to 500Hz
 Channel D2 250ms / 4-20mA range set in software
 250ms / thermistor 0-100°C.
 Channel D3 250ms / 4-20mA range set in software
 Channel D4 2ms / 4-20mA range set in software

Outputs

Channel D1 16Bit 4-20mA output – loop powered
 Serial COM 2ms update rate input to a PC for analysis with COMR software
 Alarm relays No volt contacts for high and low alarm.
 Alarm channel Set in software to any channel

Power

Voltage, std. Regulated 12 VDC supply

Excitation output

12 VDC 12 VDC ±5%, 200 mA

Environmental

Temperature 0°C to 60°C
 Storage Temperature -40°C to 85°C
 Relative Humidity 95% at 40°C, non-condensing
 NEMA-4X (IP-65) when panel mounted

now with remote
FD20-GPS
 Intelligent control.

Save your process
 by prompt action.
 Reduce down time.
 Save on fuel bills.

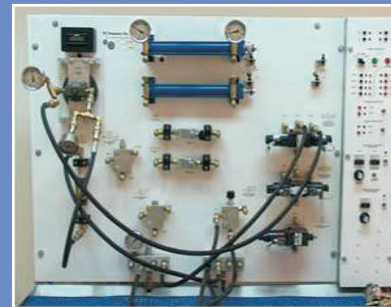
FD20-GPS Intelligent control.

FD20 - Now available with Remote monitoring and switching.
 If your process triggers an alarm, how do you find out?
 Is it next time you pass the control desk?
 Does it take you too long travelling to site to check the status of your equipment?

Receive a text if there is a problem.
 Send a text to take remedial action on the remote site.

The FD20-GPS calls you if there is a problem.
 You can text the FD20-GPS to switch devices
 to make things safe until you get there.

You can even text the FD20-GPS to check how it is!



The jbj FD20 readout is a four-channel device designed to display data from a variety of process sensors which when used in conjunction with FD20 COMR software will provide comprehensive data logging functions.

The instrument has a maximum of five inputs compatible with a wide range of industrial sensors.

Channel 1 accepts a pulse signal from a variety of devices such as flow meters, speed sensors or inductive proximity switches. A prime example of this channel is the use in conjunction with the jbj Seim MPV series high accuracy flow meters. The range consists 3 flow meters delivering between 0.2 lpm to 900 lpm with an accuracy to within 99.5%.



Channel 2,3 and 4 are 4-20mA inputs compatible with a wide range of standard sensors such as pressure transducers and temperature sensors.

Channel 5 is designed to accept a pipe clip thermistor, an inexpensive temperature sensor available from jbj Techniques. The thermistor input can be multiplexed with either channel 1 or 2.

The FD20 has four outputs, the first of which will display 4 of the inputs across a local LCD high contrast display, selected for ease of reading. Up to 4 channels of data are displayed offering configurable scale and units.

Output 2 is a high speed serial data connection which enables data transfer to a connected PC. Data from four channels can be streamed to facilitate accurate data logging.

Output 3 allows the setting of high or low alarm points to be set using volt free contacts.

Output 4 gives a 4–20 mA signal scaled to convert channel one's pulse data to a compatible display unit. Use of this port enables connection to another meter for displaying or logging pulse (flow) data.

The thermistor input is factory calibrated to the jbj Techniques pipe clip device enabling easy set up.

Scaling for the remaining channels is made using intuitive menu options within the firmware and allows the setting of sensor ranges and also the data viewing style.

jbj COMR Software is provided along with the FD20. When used in conjunction with the meter, the software adds further real time monitoring on the PC along with comprehensive data logging options. Four channels can be viewed as analogue or digital displays. Each readout may be configured to show the data in the most appropriate way, this may be by digital readout or by an on screen analogue gauge. In addition to the readout, the software streams all four channels into a real-time graph representation for easy viewing of the most recent changes in data.

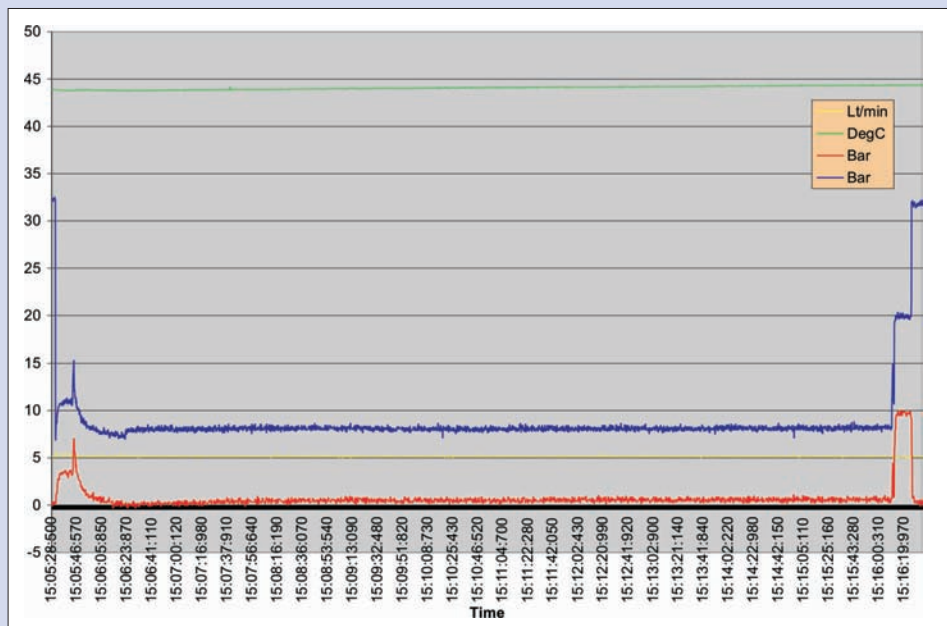
The on screen gauges are easily configured to the process by setting sensor names, units of display and sensitivity. The user can also set software alarms on each channel.

The main feature of the software is the ability to data log all four channels. Set a time interval for data sampling and capture each channel reading along with a date and time stamp and the information is stored to disk. Log events may be taken down to 500 samples per second or many seconds as required.

Log files are scaled in text format so may be viewed as they are or viewed in graphical form using the COMR software. For more comprehensive analysis then the data can be easily imported into a spreadsheet.



COMR monitoring and logging software



The FD20 applied

Application 1

Machine log: Log a full production cycle.

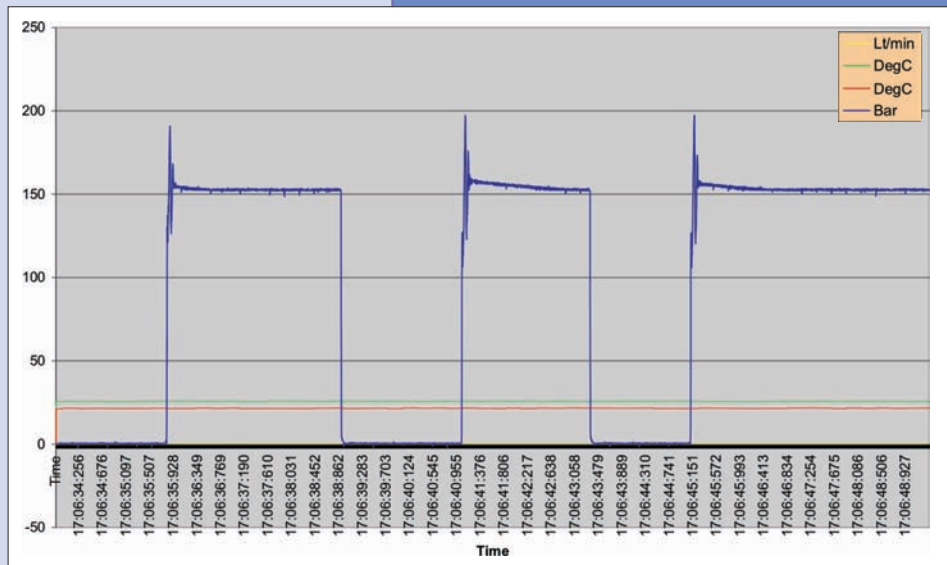
The example shows all four channels of the FD20 monitoring an automated hydraulic press. The process log clearly shows the system performance.

Temperature, the green trace is very gradually rising through the cycle as fluid is discharged over a relief valve.

Oil Flow, the yellow trace is constant indicating the correct pump flow and stable pump performance.

Two pressure readings are being monitored indicated by the red and blue traces. The pressure transducers are mounted on the full bore and annulus ports of a double acting cylinder. Data from the transducers is fed into a PLC where it is used to control the down force of the press.

In this application it was important to confirm the two pressure readings tracked each another with a constant differential i.e. the press closed with constant force.



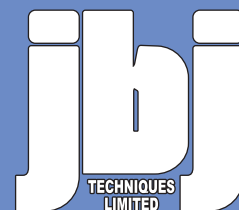
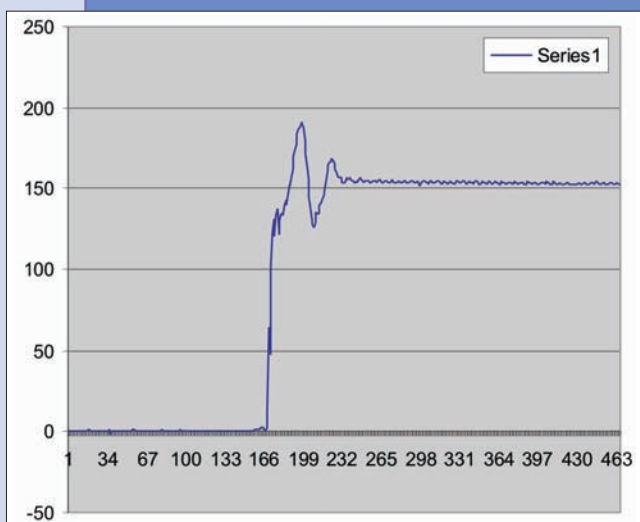
Application 2

Unit Test: : Relief valve tested from 0 to 150 bar. Log sample rate 2ms.

At this resolution it is possible to see exactly how the valve and system is performing.

In the close up below left, the system pressure can be seen to bounce for a few ms then settle to a constant pressure.

From zero pressure we can see a rapid rise as the main solenoid valve is closed. The pressure overshoots on the set pressure showing the response time of the relief valve and the pressure transient approaching 200 bar. The ripple in the high pressure trace is caused by the pump pistons.



Application 3

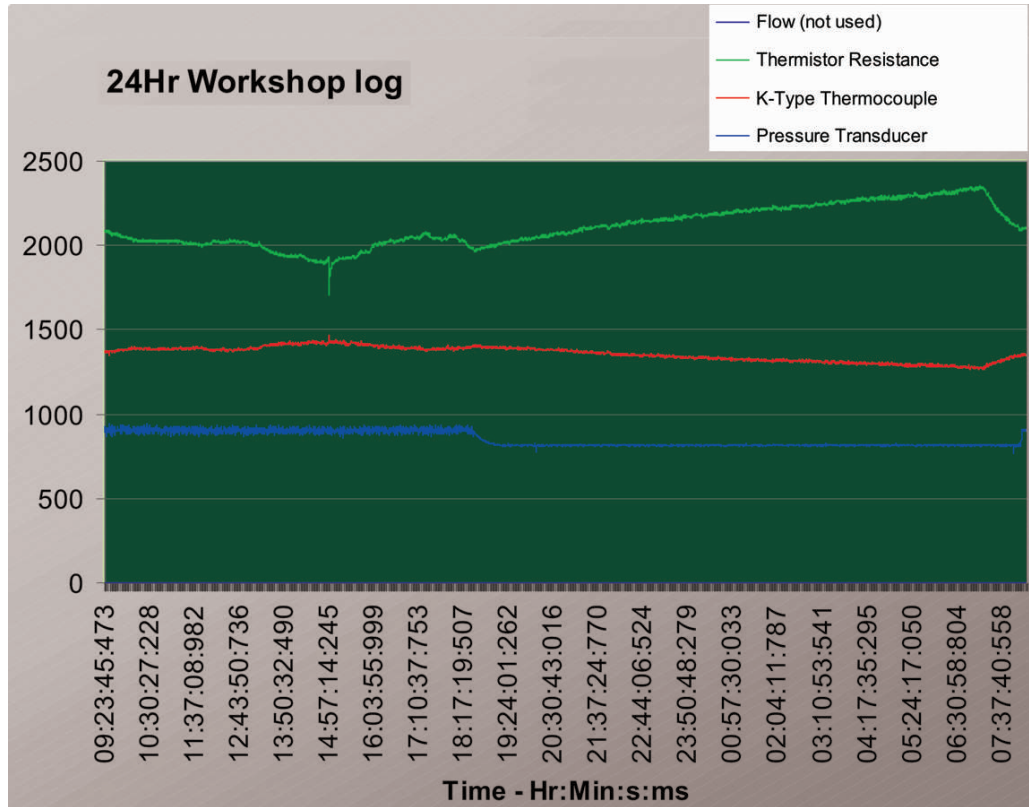
Long term logging.

The example shows a 1 sec log interval over 24 hours.

A pressure transducer is monitoring air line pressure, a thermocouple showing the air temperature.

Log starts 9.23 a.m. with the air system charged. The compressor is cutting in and out throughout the day. Further analysis of this data clearly shows the max and min pressure of the air and the duty time of the compressor.

Temperature through the day is stable in the morning, rises to a peak at 2 p.m. then falls steadily through the night to 7 a.m. when the heating came back on.



To monitor data accurately, easily import it into spreadsheet software such as Excel for analysis, plug and play straight out of the box the FD20 from jbj Techniques Limited is the cost effective answer for many and varied applications . . . test benches, oil dynamics & hydraulics systems, power generation, dosing systems

A better understanding of the integrated process steps in an automated plant can help processors enhance performance and make cost savings . . .

See the reviews in Industrial Technology and DPA magazines. PDF format copies of these can be viewed at www.jbj.co.uk/fd20.html or at the related individual magazine websites.



www.industrialtechnology.co.uk/



www.dpaonthenet.net/