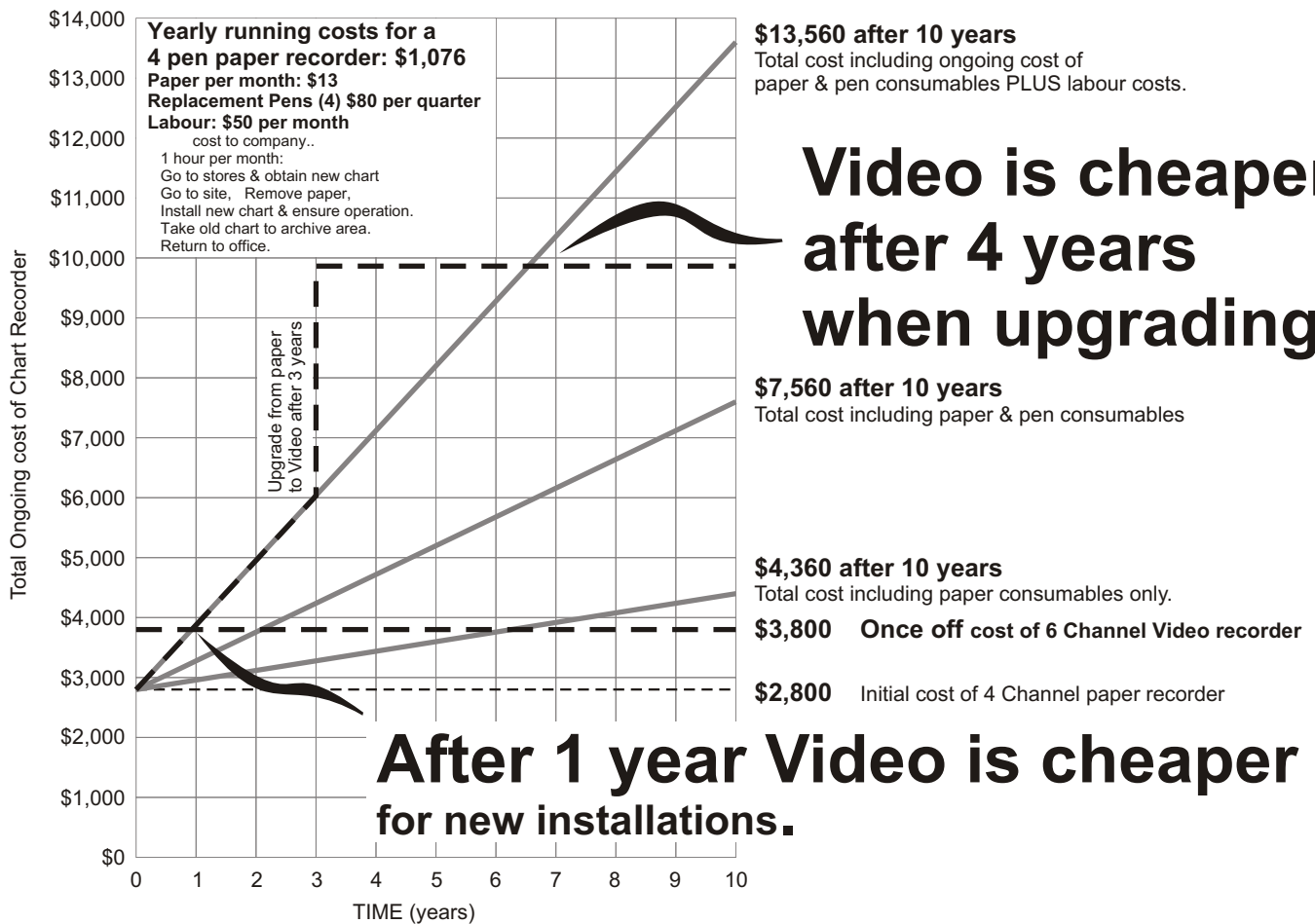


Chart Recorders Paper Vs Video

What is the real cost of owning and operating a chart recorder ?



PAPER or VIDEO - Which one for your operation?

In recent years the cost of video chart recorders has reduced dramatically. Operations need to consider the ongoing cost of traditional paper recorders, in view of the fact that in four years these ongoing costs (consumables & associated labour time), would be equivalent to the cost of upgrading to a video recorder.

The ongoing cost are often overlooked during the initial purchase, where only the cost of the recorder is considered. The cost of monthly chart paper, and replacement pens, can be easily calculated, but the hidden and largest cost is the labour time of replacing the consumables on time each month or when required. This task takes staff away from other duties, and relies on operators being available to replace the paper chart. Noting that if the chart is not replaced, valuable data is lost.

The hidden cost of the labour is in the perception of the "5 minute job". The actual task of replacing the paper may take only 5 minutes, but the whole procedure is likely to take on average 60 minutes, when the operator needs to go to stores to obtain new paper, physically get to the recorder site, remove the paper, install the new paper,



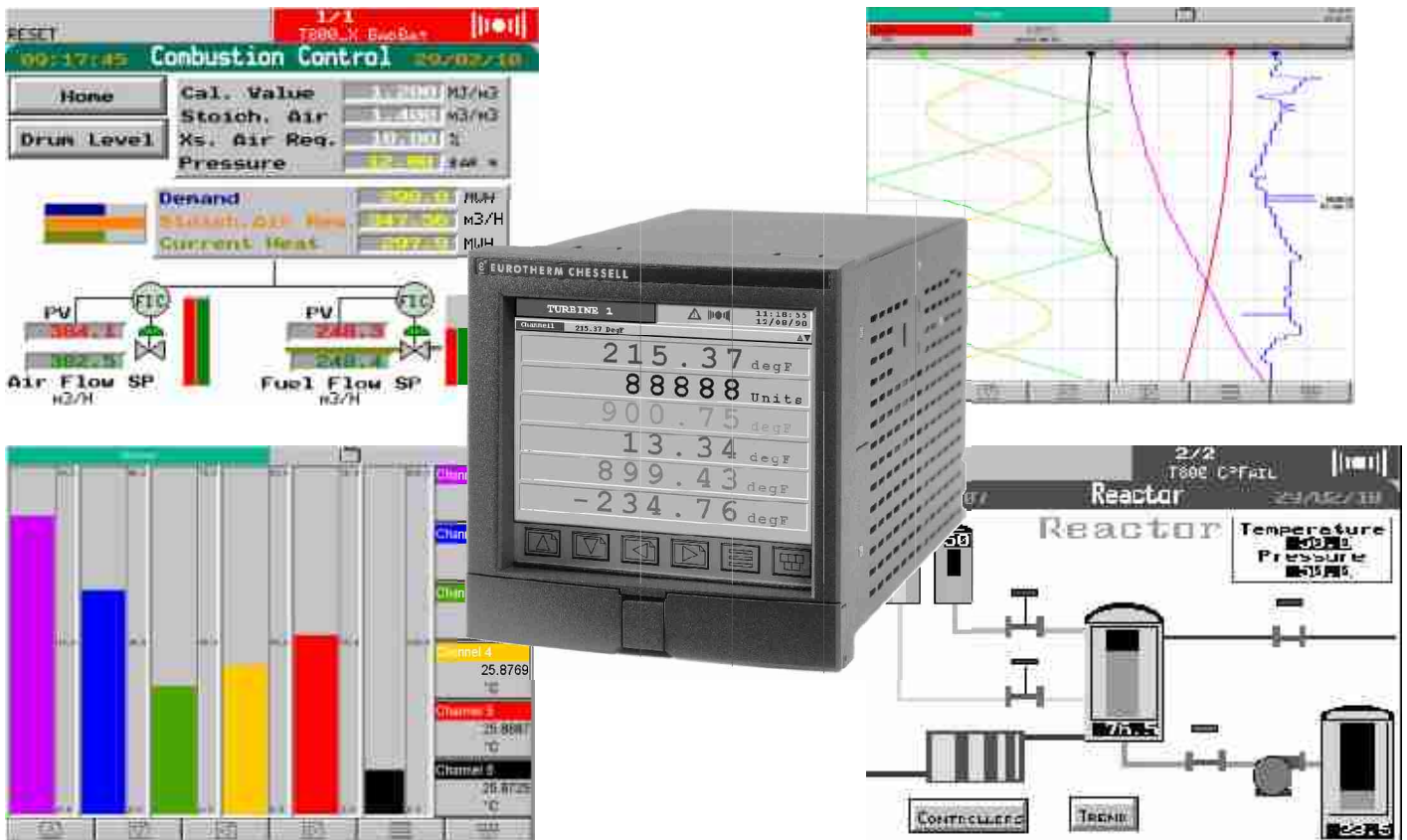
ensure the new chart is recording correctly, then take the old chart to the storage facility, archive the data and log it into the system, return to their office and resume normal duties. Many staff would say that the cost is only \$30 as that is their hourly wage, however, the cost to the company is not just the hourly wage received by the employee, but also the total cost of employing that person, including tax, super, and holiday pay, and this is only if the work is done by a person on the average wage.

So why shouldn't all plants simply change to video recorders? Some industries are still bound by standards that make paper recorders preferable due to the current difficulty of meeting the approval requirements for digital signatures.

For the majority of users however, the payback time alone of changing to a video recorder should be reason enough to consider upgrading from an existing paper recorder. Video, apart from longer term cost saving, offers a number of major benefits and should be seriously considered for all new recorder applications.

Video / Graphical Recorders

Eurotherm Video / Graphical Recorders allow custom visualisation & user defined screens to present data which can be quickly interpreted by the operators.



A Video recorder, also referred to as a Graphical recorder provides the same output as a traditional paper recorder. However, with the advent of digital technology, the Video recorder now offers the user a range of new opportunities for complete data management, which were impossible to implement on analogue paper recorders.

Increased Accuracy.

Increased reliability.

as there are no moving parts to fail.

Automatic data storage.

Choice of data presentation formats:

Paper, 3.5" Floppy, Memory Card or Automatic Network Retrieval.

Fully interactive graphical screens allowing custom screens.

Touch screen flexibility.

Reduced multichannel input costs.

Vastly Increased

Internal Storage Memory Capacity.

Up to 1G [1000M] byte storage, allowing for long term internal storage.

Integration to

Standard Computer Network.

Allowing real time data retrieval when you want.

" Windows" style operating systems.

for simple operation.

Onboard computing.

for advanced computational algorithms.

Plus NO ongoing running costs.

Ethernet: Link Plant Recorders directly to your desktop PC



With the ability to interface directly to a standard Ethernet connection, graphical recorder data can be directly imported to your desktop PC in real time.

Why Ethernet for Eurotherm Graphical recorders?

Compatibility: Integration with most standard site networks.

Time Saving: Ability to move files over a network using FTP (File Transfer Protocol) to save the time consuming exercise of going to the unit, downloading data to a disk, returning to your PC, loading data into your PC from the disk.

More storage space, less chance of losing data and less time spent changing disks: Using the Ethernet connection historical process data can be automatically archived to any server. A secondary server can be selected in case of failure of the primary server. Nearly all servers will be backed up on a regular basis too. Effectively our storage capacity just became infinite and protected!!

Data security: By transferring log files directly into Review software over the network there is no chance of:

- a) Data being lost because disk and Flash are full.
- b) A floppy disk being lost or damaged.
- c) Data being tampered with.

Additional time saving: Live data from networked recorders can be viewed over a network utilising the Bridge 5000 software.

FTP (File Transfer Protocol)

All of the 5000 Series instruments from Eurotherm now include FTP as standard. This includes both client and server full support. FTP means that network compatible recorders such as the 5000 series can utilise standard protocols and allow powerful networking facilitation. The IP address can either be set manually or obtained from a BootP server on start up, allowing for full flexibility.

Once the recorder is sitting on the host network the archiving transfer can be configured. Recorders can now be set to automatically archive data to a remote server using IP addressing. Passwords can be set via check boxes in the configuration allowing a username and password set to restrict access. Please note that while this process is running the archiving is still applied to the fixed internal media too such as the PC Card or Floppy Disk.

REVIEW software can also access data using FTP over the Ethernet. Any network compatible recorder such as a Eurotherm 5000 unit connected to the network can be

addressed within Review and files transferred automatically or on demand.

Bridge 5000

The Bridge 5000 software package is compatible with all Eurotherm 5000 recorders, and is supplied as standard. Bridge 5000 will work on a direct Ethernet connection, a LAN, WAN or stand alone through the Internet! Bridge 5000 allows the user to be able to see real time data from the recorder completely remotely!

Benefits:

Bridge is on a "site licence" and can be freely distributed across a site.

Provides a seamless, remote window into the 5000 recorder.

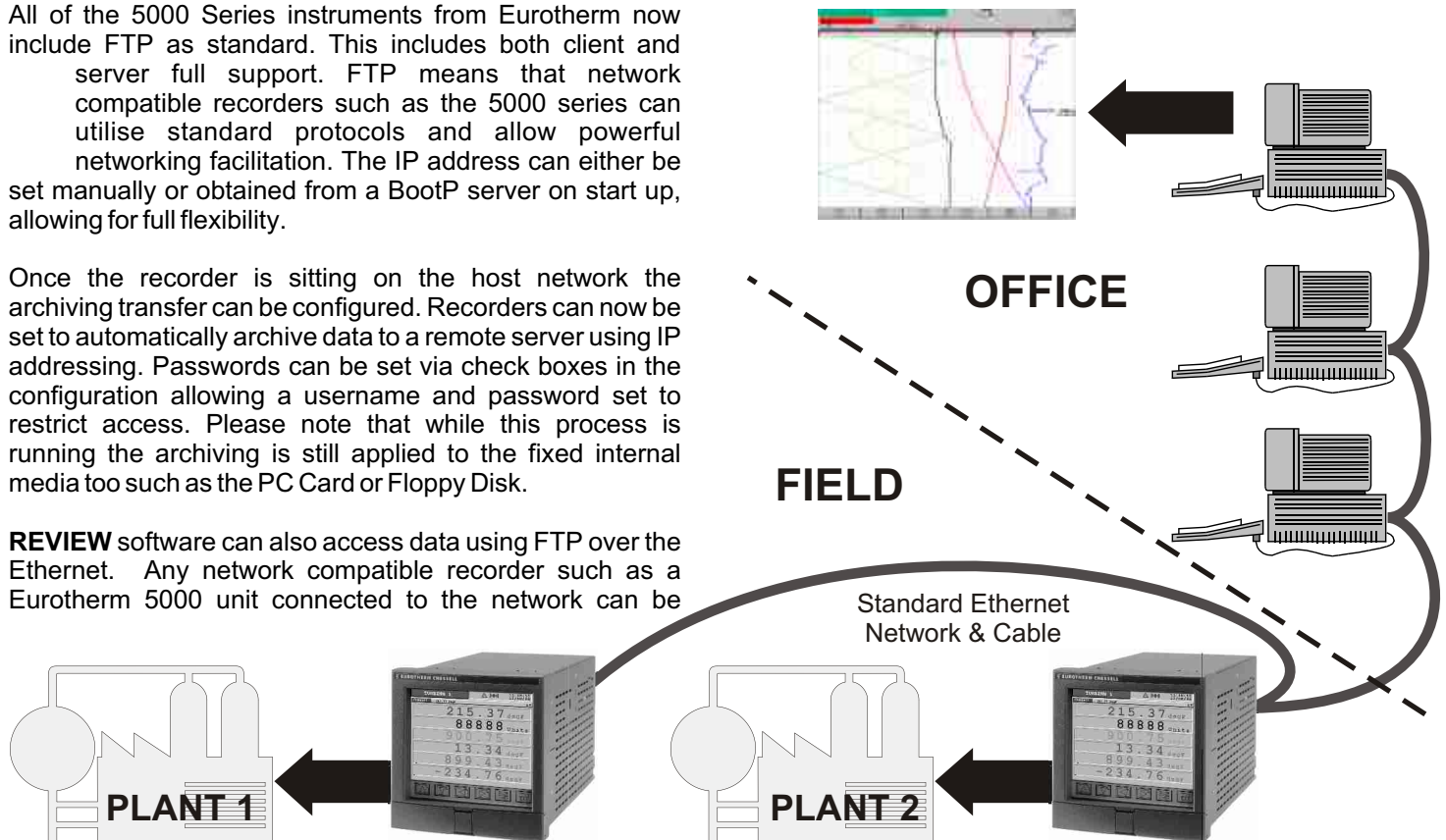
You can open as many Bridge windows as you like on your PC (limited by your PC capability) to look at different recorders all over your site.

A single recorder can be viewed by up to 4 Bridge 5000 connections at the same time.

You can view live data in any of the standard forms available on the recorders: Vertical trend; Horizontal trend; Vertical bar graph; Horizontal bar graph, and Numerics.

Bridge 5000 is a windows based program; therefore you can resize windows, do screen dumps, run multiple sessions and any other normal windows functions.

Ongoing software development for enhancement are currently being completed, including: Viewing of custom screens and remote configuration capability.



Sample Rate / SCAN speed.

Does it vary with the number of channels?

The sample rate / scan speed of the recorder is the speed or period at which data can be obtained by the recorder. Care must be taken when determining the sample rate / scan speed requirements for your application as there are two specifications for sample rate / scan speed.

Parallel Sampling: All channels are sampled during each scan period. The sample rate is independent of the number of channels being scanned by the recorder.

Serial Sampling: Each channel is sampled individually and in order at the specified sample rate. The sample rate per channel is calculated as the number of channels multiplied by the scan period.

For a single channel recorder, Serial and Parallel sampling rates are identical.

A 36 channel Parallel scanning recorder, with a scan rate of 125mS, samples each channel every 125mS. While a 36 channel Serial recorder with a 125mS scan rate would only sample each of the 36 channels once every 4500mS (125mS x 36).

Use Parallel scanning recorders for applications where data synchronisation is required.

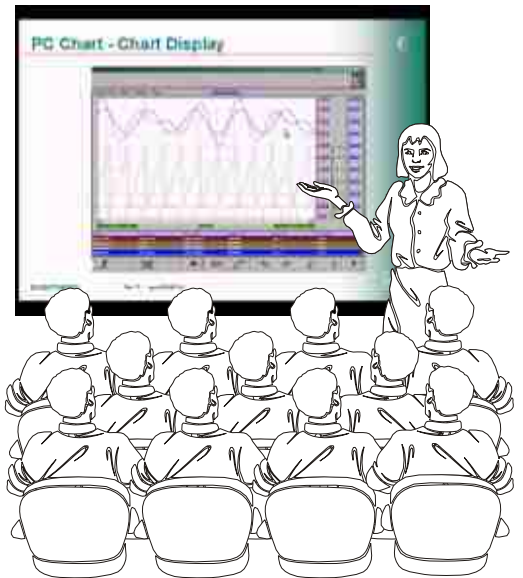
All Eurotherm 5000 series graphical recorders use channel independent Parallel sampling with sample rates for up to 36 channels, of 125mS.

That next presentation...

Make gathering and presenting the data for your next presentation on plant performance simple and easy.

With paper recorders one of the most difficult tasks is to obtain useful historical data for presentations and information gathering. This task requires all of the relevant archived paper data to be obtained and data interpreted off the paper chart and manually typed into a spreadsheet such as that used in Microsoft Excel. After this is achieved the data is simple to graph and sort. This task depending on the amount of data may take days or weeks. And there is a major risk of human error in reading the data and entering the data correctly.

However, if the data is gathered automatically by a graphical chart recorder then the task is simple. The recorder data is exported to a file which can be directly imported into Excel or any other standard program run on your network.



Paper Chart Recorders are still available. And will be for a long time...

Eurotherm is fully committed to a portfolio of both paper and paperless chart recorders. The extensive range of paper chart recorders includes low cost 100mm basic single pen models to multiple trace 250mm pen recorders and multipoint models for up to 48 channels. Circular chart recorders are also available.

Although still retaining a paper output, today's paper recorders are high technology combinations of the traditional paper output with the latest electronics and features. Many of the paper recorders in the Eurotherm range are also provided with digital displays, are Profibus comms compatible and models are available with both paper and digital data outputs. Universal inputs, powerful maths functionality and 80 character displays allow the operators of Eurotherm paper recorders to utilize the best of both technologies.

Paper recorders still dominate the marketplace and will continue for the next few years. However, the convenience, inherent reliability, data security and cost effectiveness of the newer graphical technology are expected to see graphical recorders dominating the marketplace especially for new installations.

If you have any questions please contact Eurotherm to discuss your application requirements.



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