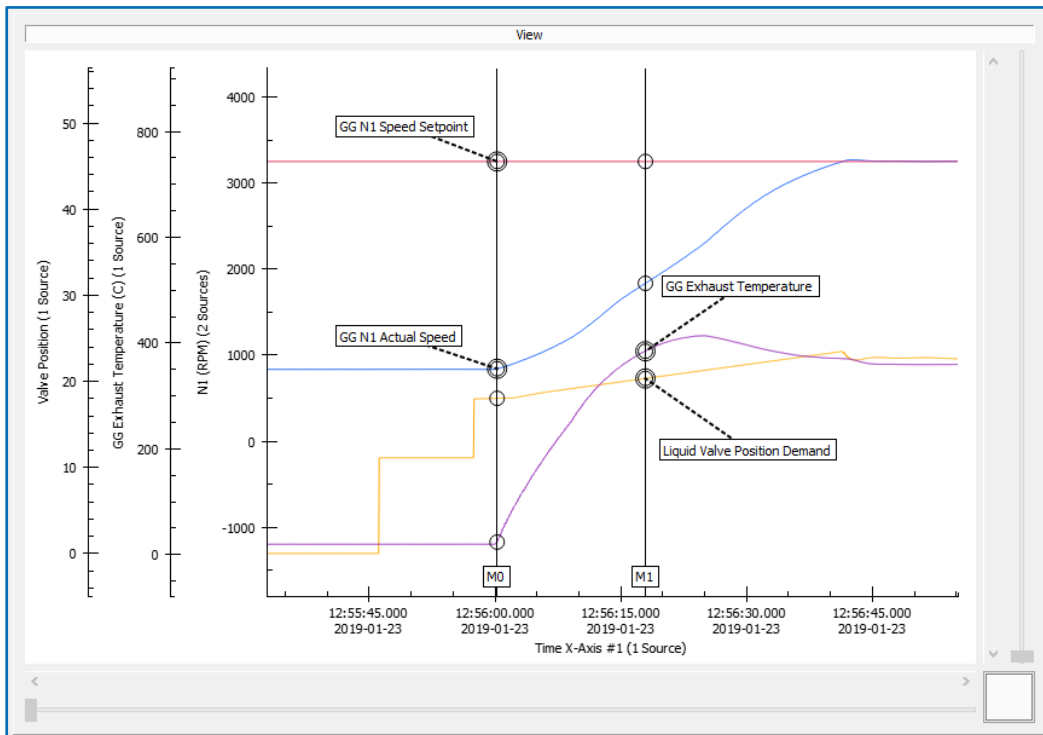


HC-PLOT

We at Holland-Controls have over 25 years of commissioning experience in gas turbines, but we constantly lacked the right data analysis tool for the job. For this reason, we have developed a tool in-house to cater to the demands of commissioning engineers, service engineers and technicians. Meet HC-PLOT.

HC-PLOT is the ultimate tool for all of your data visualisation, plotting and analysis needs. With HC-PLOT the user can quickly and easily load and examine many types of different data files. With no restrictions on file size, as long as your computer has sufficient memory, your data can be loaded.

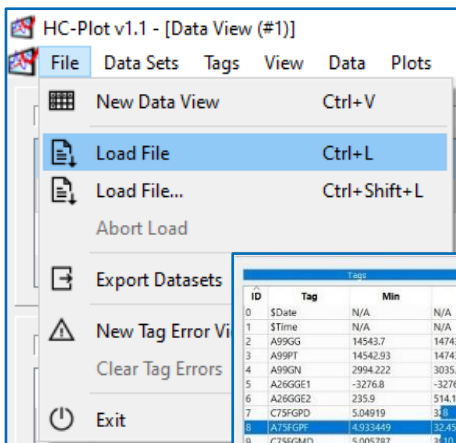


Markers				Statistics		
Group	X-Data	Y-Data	Description	Minimum	Maximum	Rate Y (dy/dx)
0	3	Time [2]	ACT02 [2.218] GG N1 Actual Speed	M0	M1	M0
1	3	Time [2]	ACT03 [2.219] GG N1 Speed Setpoint	0	3250	0/s
2	4	Time [2]	ACT31 [2.247] Liquid Valve Position Demand	18.02194	20.32979	0.1304611/s
3	5	Time [2]	A26GGE [2.31] Gas Generator Exhaust Temperature C	23.5	384.4875	20.4063/s

HC-PLOT Data Visualisation Suite

Key Features

- Efficient processing very large data files (>1GB)
- Any number of datasets can be loaded and analysed simultaneously
- Easily find the tags you want to plot by sorting, filtering and searching
- Plots are created quickly and easily using drag and drop on smart, automatically scaled axes
- Data can be displayed on any number of differently scaled X and Y axes, each with individual zoom and scroll
- Change the colours of many visual items, to fully customize the view
- Add markers to highlight significant events
- Perform statistical analysis of your data
- Create scatter plots of one variable against another
- Export subsets of your data to separate files
- View the loaded dataset in tabular form to inspect individual data points



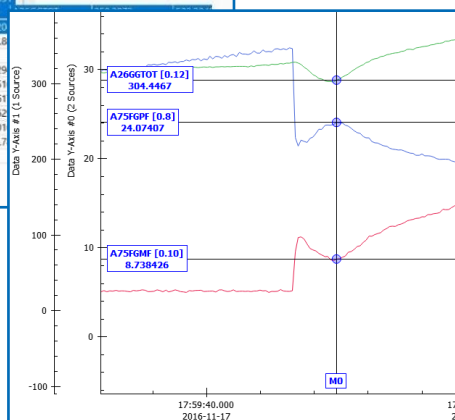
Load

Analysing data in HC-PLOT can be done in 3 simple steps. Firstly, load your dataset.

ID	Tag	Min	Max
0	\$Date	N/A	N/A
1	\$Time	N/A	N/A
2	A99GG	14543.7	14743.81
3	A99PT	14542.93	14743.86
4	A99GN	2994.222	3035.588
5	A26GGE1	-3276.8	-3276.8
6	A26GGE2	235.9	514.1
7	C75FGPD	5.04919	32.4508
8	A75FGPF	4.933449	4.933449
9	C75FGMD	5.005787	40.1331
10	A75FGMF	4.991319	40.1331
11	A99GPS	14585.76	152.25
12	A26GGCI	250.3073	1065.8
13	A26GGCT	566.0926	1065.8
14	A75GGB	0	0
15	A63FGS1	18.40278	18.929
16	A63FGS2	17.69676	18.651
17	A63GGCD	9.037724	11.661
18	A63OX	0.137623	0.2362
19	A63FGP	8.857783	12.701
20	A54GNP	0	5134.7
21	A26PTE	0	0

Plot

Select the variables you would like to plot, and drag onto the plotting space.



Analyse

Interact directly with the data to assess the performance of your equipment!

Application examples

Analysing high speed data is a crucial tool for the diagnosis of mechanical and control issues in all types of equipment. Some use cases are as follows:

- Compare multiple engine starts to identify degradation in performance
- Identify trends in vibration magnitude to revise maintenance schedules
- Establish and report baseline performance of equipment
- Identify failing instruments
- Analyse pre-post trip data for Root Cause Analysis
- Compare engine performance between multiple units
- Analyse equipment efficiency over time

Gathering data

Holland-Controls has also developed a unique high speed logging tool called HC-LINK. HC-Link can natively communicate with PLCs and log process data in intervals as short as 10ms. The output from HC-LINK can be directly plotted in HC-PLOT without further data preparation.

Integration of customer specific requirements

Using a modular software design and having developed HC-Plot in-house makes it possible for Holland-Controls to implement customer specific requirements on-demand.