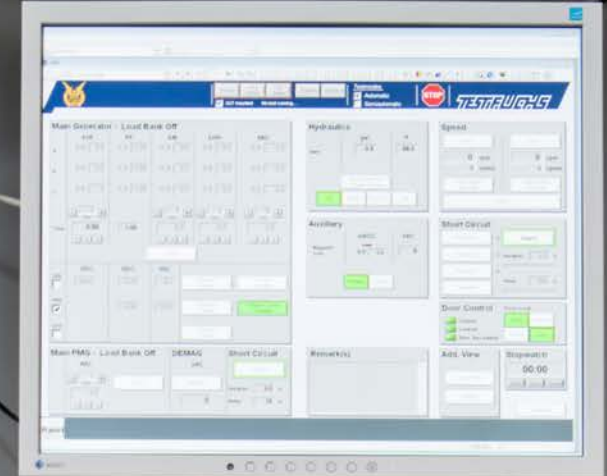


safety in test > safety in flight

TESTFUCHS

TEST-FUCHS Intelligent Software



> TEST-FUCHS Intelligent Software



Reduce costs, complete jobs faster and increase reliability

The experts at TEST-FUCHS help you step by step to **map out** the most efficient and effective test sequences. Use the fully automatic mode to **ramp up productivity** or perform **investigative testing** in manual mode.

Whatever your needs, we will design the **software according to your requirements** and not the other way around.

The operation of TEST-FUCHS intelligent software requires only **basic computer knowledge** and runs on Microsoft Windows.

Easy to use software that everyone can work with

Test steps and sequences use simple commands that everyone understands. This enables operators to **adapt or write** their own test sequences.

The test sequences can easily be monitored, stopped and re-started. The operator always remains in **control**. The operation and handling of a test becomes simpler while still communicating what the test stand is doing and how it is performing.

Intuitive software that keeps the operator in control

- ▶ Easily create new and adapt existing test sequences on your own
- ▶ Stop and re-start automatic test sequences at any time
- ▶ Create and store automated customized test reports
- ▶ Archive results to ensure long-term data security
- ▶ Always stay compatible with older versions
- ▶ Use the software on any test stand

> The Software Functionality

Communication with PLC and data acquisition hardware

A common communication layer provides the hardware with independent access to measurements and set point values.

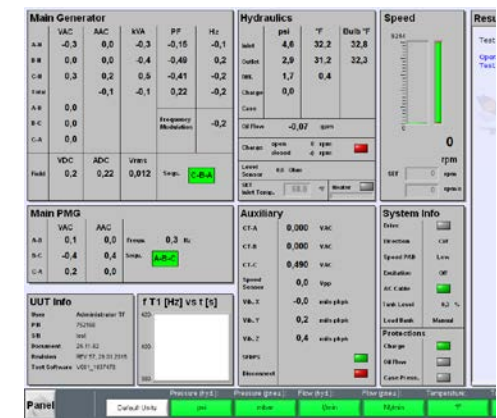
The creator of the UUT-programs does not require specialist knowledge of the various

measurement and control systems.

A variety of different measuring systems can be integrated in the TEST-FUCHS Software through an open interface.

Fully integrated measurement systems:

- ▶ National Instruments DAQmx, PXI-systems
- ▶ Sigmatek real time system
- ▶ Simatic S7
- ▶ ADwin real time system
- ▶ Beckhoff
- ▶ GPIB
- ▶ Srial



User management

Profit from a fine-grained user privileges system using a built-in user editor. To simplify the process of user management, there are already predefined user groups, which speed up the creation of new users. Based on these predefined user groups, the privileges of individual users can be refined.

UUTs and serial numbers

On a fully automated test stand, the TEST-FUCHS Intelligent Software manages the generated test data and results at the UUT and serial number level. Additionally, there is a distinction of sessions, which keep track when you test one UUT with a serial number repeatedly.

Online data recording

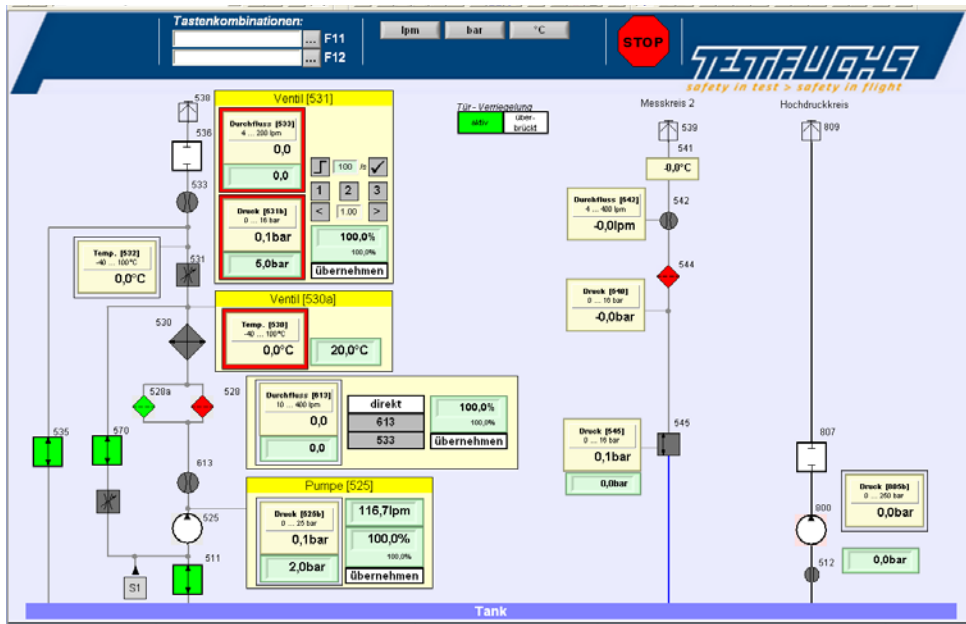
You can store all (or just a subset) of the measurements and set point values onto the hard disk directly. There are various file formats available for exporting and further analysis (e.g. text files, binary files, or TDMS).

Set point values profiles

Create profiles such as ramps, linear segments or sinusoidal waves with a built-in editor.

The editor is easy to use and adjustable with a few clicks.

> Operating the Test Stand



Configure your own individual graphical user interface design

User interface elements

Work with user interface elements to display measurement readings, numerically, diagram views and display status indications. In addition, there are elements to provide input for set point values, digital switches and to trigger nearly any type of action easily with buttons.

To create descriptive user interfaces, the software provides elements to draw schematics, display pictures and symbols or text elements. There is an element to show html views directly in the user interface. This element is used to show instructions or test results.

The graphical user interface - handle it within a short time

A test stand is operated through multiple user interfaces and automatic test sequences. The operator logs into the software and with his individual login the respective user privileges are applied.

The interface of the test stand can consist of multiple screens. The operator can browse between these single screens to control the test procedure.

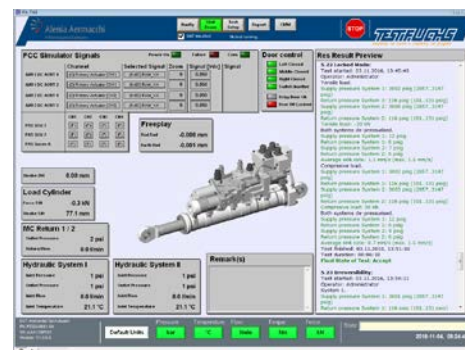
During an automatic test run, the corresponding screen is shown automatically. On each screen any number of measurement value and set point elements can be displayed.

The measurements on these screens are shown with their physical unit. Different UUTs may have maintenance manuals with different physical units e.g. pressure can be specified in bar, psi or kPa. A basic feature of the user interface is the possibility to switch between the units while operating.

Furthermore, it is also possible to create multilingual user interfaces for the test stand. The language can also be changed online.

The user interface screens consist of different elements. The software has a built-in user interface editor, which allows you to insert, configure, arrange and delete the elements easily and directly.

Free arrangement of elements



Choose parameters from lists



> Test Sequences and Test Reports

Test sequences

On an automated test stand, you can execute preconfigured test sequences. These test sequences are especially tailored to the individual needs of the customer. The software provides the opportunity to start, stop and view these automated sequences.

The necessary interaction for the user can range from just starting a test and waiting for the test stand to perform the test automatically without any further intervention. If at any point of a test an intervention by the user is mandatory, the sequence prompts the exact commands and actions.

Test reports

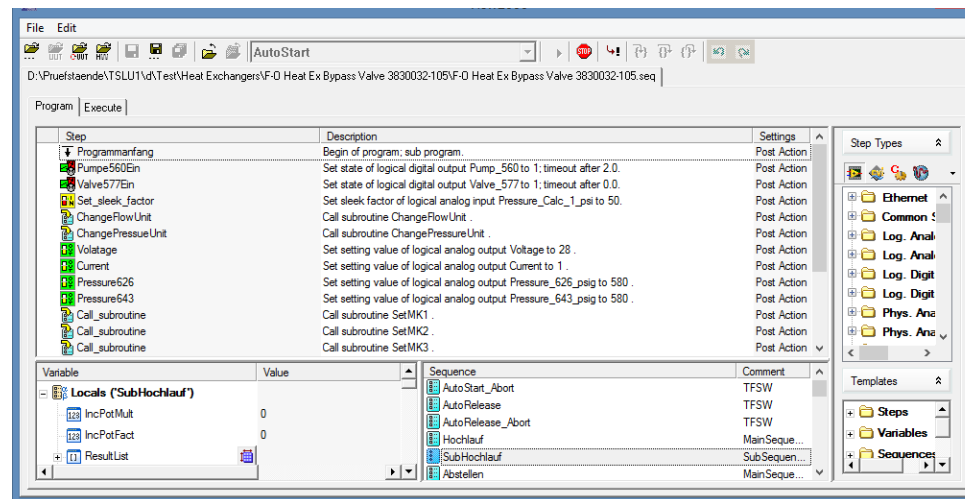
The TEST-FUCHS Intelligent Software collects all relevant test results during one or more automatic tests and produces a test report after all the necessary tests on a UUT are carried out.

The report generator uses predefined templates to generate test reports. These test reports can be printed or stored in Microsoft Word files or Adobe PDF files.

User for your reports:

- ▶ UUT and serial number specific data (e.g. name of UUT or operator)
- ▶ Graphs generated with the diagram view
- ▶ Measurement and set point values with color coded tolerance indication
- ▶ Variables such as numbers, strings and booleans

no special training required



Easy and simple handling No programming

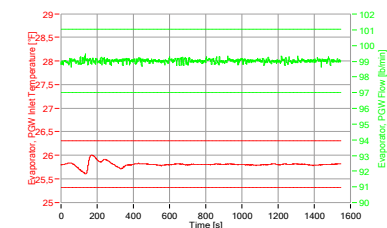
Test Record Sheet

Name: VCRU	CMDS: 21-59-15	PEP: W1141	Test Date: 15.09.2016,
P/N: 67000008-00	Rev.: 001	Technician:	11:12:16
S/N: 67000008-00230	Date of Rev.: 18.07.2014	Acceptance Test @ TF	
Test Circuit: PGW1			

Name: Condenser Fan Assembly	SW P/N: SGC*****1203
P/N: 67400004-00	
S/N: 67400004-000270	

Test Step 10 (VCRU Evacuation and charging procedure)

Preparation Parameter	Requirement	Actual value	Result	Comment
Evaporator, PGW flow	97.0 .. 101.0 lb/min	99.0 lb/min	OK	
Evaporator, PGW temperature	25.3 .. 26.3 °F	25.8 °F	OK	
Condenser, Air flow	131.4 .. 139.4 lb/min	134.6 lb/min	OK	
Condenser, Air temperature	91.2 .. 95.2 °F	93.3 °F	OK	



> Adjustment Tool



Adjust your measurement channels with a few simple steps

With the TEST-FUCHS Intelligent Software and its adjustment tool justifying measurement channels is fast and easy.

During the process of calibration it might be necessary to justify a measurement channel.

In this situation, the adjustment tool reliably helps you with your daily activities.

The transducer characteristic for each measurement channel is stored in a data base.

Actual Calibration session: 16

AI USCHI 100

Calibration session: 15

Date: 07.03.2018

Calibration hint:

Signal

Unit	digit
Min	0
Max	10

Value

Unit	V
Min	0
Max	10

Signal	Value
0	0.1
5	5.075
10	10.1

+

-

> Software Management and Updates

The TEST-FUCHS Intelligent Software package contains an easy to use tool for software management e.g. backup data

Setup and backup of software suite

TEST-FUCHS Intelligent Software can be installed on a compatible computer running Microsoft Windows OS, via a menu-guided setup.

Upon delivery of the test stand computer system, a backup of the complete hard drive is created, using a commercially available hard drive-imaging tool. This image will be provided to the customer. The transducer characteristic for each measurement channel is stored in a data base.

Backup and restore of UUT programs and user interface

All user interfaces and UUT program files (including test parameters) can easily be backed up any time by using the TFVersion Control tool. This useful tool allows the user to select what items they would like to backup and store it anywhere with just a few mouse clicks, regardless whether these items were created by TEST-FUCHS or by the customer.

ALWAYS UP TO DATE

EASY TO LEARN

EASY TO USE

Backup and test result reports

Test results, along with already generated test reports, are backed up with the TFVersion-Control tool too. A backup of these files can also be done with a few mouse clicks. The data can be restored with the Windows Explorer via copy and paste.



> Create your own Test Sequences (additional license training)

This unique add-in tool provides you with an easy way to generate your own test programs on the main computer. Once you are done, you will not notice the difference between your own written test procedures and those already provided by TEST-FUCHS on the test stand. All the functions of this very powerful software are preloaded and available to you on-demand.

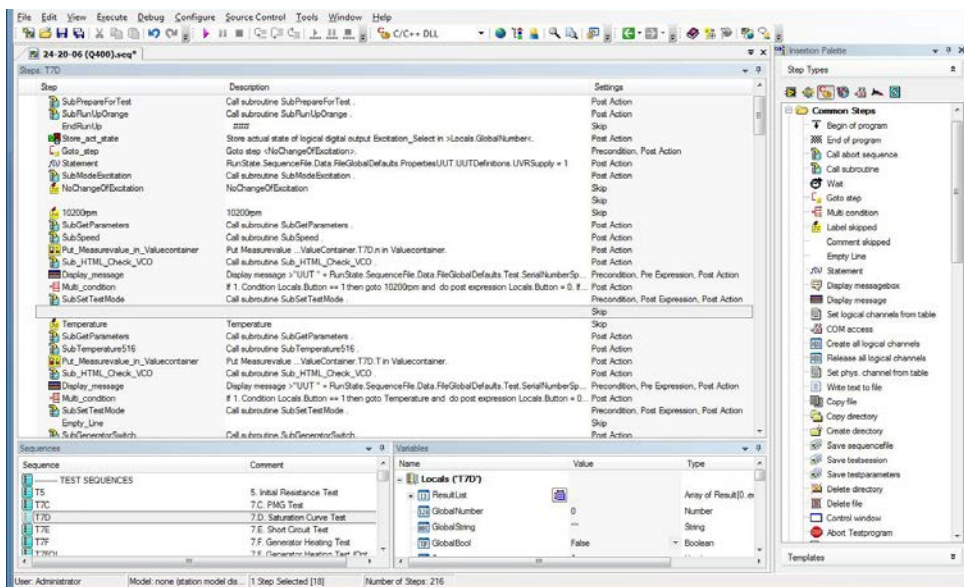
Use the following functions:

- > Loading and starting of sequences
- > Execution of single steps of sequences
- > Display of all parameters of each step
- > Setting of breakpoints
- > Stopping of the program execution

National Instrument's TestStand™ is integrated in the TEST-FUCHS intelligent Software. It contains all the TestStand™ functions enhanced with Intelligent Software functions to write more powerful sequences. Within the program, you can choose from a multitude of steps and only the relevant ones are displayed to complete your program and your personalised tests. In addition to your newly written

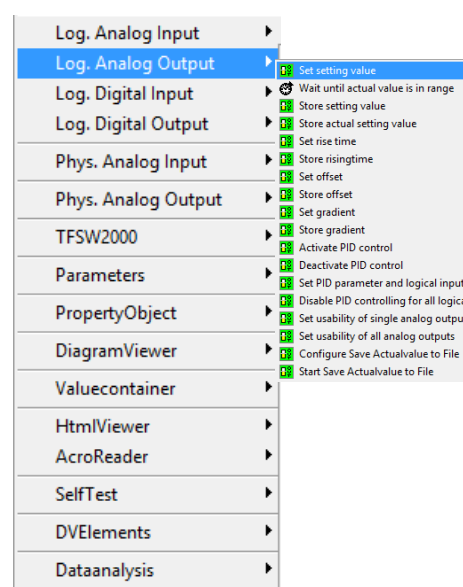
test program, the software provides excellent solutions for data backup, data analysis and the generation of test reports. You do not need to be a programmer to use this simple tool and your results will be just as professional as the pre-configured or manually adjusted programs on your test stand.

Sequence Editor

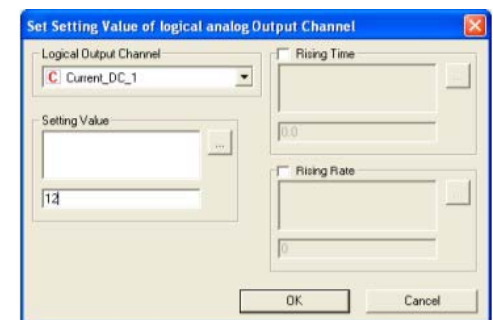


Easy Handling

Choose Parameters from Lists



Setting of Parameters



> Data Solutions (Internet of Things - IoT)

DATA SOLUTIONS is a real-time data tracking service which enables our customers to harness testing data for real-time competitive advantage.

Enjoy a new digital experience.
DATA SOLUTIONS and its customised applications provide you with full connectivity

and delivers all the essential information for the management and maintenance of your equipment as well as UUT testing results. Reduce complexity and gain advantages through transparency and collaboration.

Join us in the Internet of Things.



Predictive Maintenance



Cost and Time Saving



Monitoring and Notification



Risk Reduction

Benefits

Maintenance is becoming increasingly important in the economic life cycle of an aircraft.

Data Solutions satisfies the growing needs of our industry by providing innovation for maintenance and operations teams.



Access to Information



Globally Connected

The processed data

Data of device

Data Solutions collects details about machine hours, battery level, failure log, logbook, location, etc. Everything you need to know about the condition of your connected device.

Unit under test

Details about test procedure, degree of contamination, etc. are collected and processed. Analyse everything about the application and the live process and enrich environmental data, which can affect the process like temperature or humidity. Get deeper insights into duration of use and handling of singular procedures.

IoT adds additional value

- ▶ Know the value of your data
- ▶ Get additional insights
- ▶ Accelerate processes
- ▶ Use scalability
- ▶ Re-engineer
- ▶ Automate

test the UUT

analyse data

predict failures

plan adequate measures



Manufactured in every detail. *Safety in test > safety in flight*

Proven technology and solutions tested
by major OEMs and MROs

