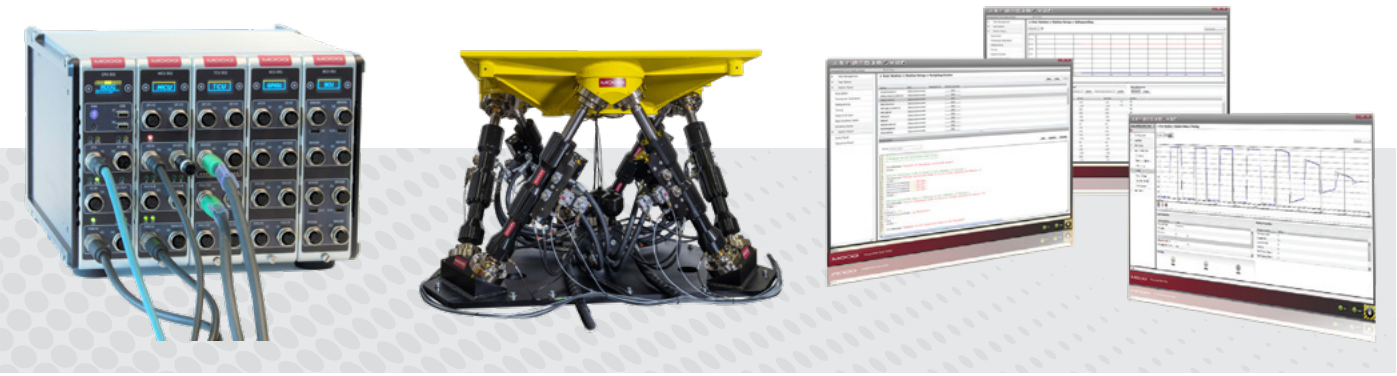
TEST CONTROLLER

MODULAR DESIGN WITH YOUR BOTTOM LINE IN MIND

Rev. F, April 2025

A RELIABLE, CONFIGURABLE PLATFORM
FOR PRECISE CONTROL OF YOUR TESTS

MOOG | Shaping the way our world moves™



MOOG TEST CONTROLLER: CONFIGURABLE. RELIABLE. PRECISE.

Reliable Results.
At Moog, we pride ourselves in providing Test Controllers with the utmost reliability. Our experience speaks for itself: Over the last 20 years Moog has sold over 2,000 systems with over 18,000 channels.

Simple & User Friendly.
Time is money. We understand your need for operators to perform complex tasks faster and with minimal training. Our simplified feature-rich user interface allows you to do just that.

Unsurpassed Precision.
24 bit resolution and high signal quality allow you to visualize minute details for the variety of loops, resulting in unsurpassed precise control.

Universal Testing.
From simple fatigue tests to highly integrated full vehicle road vibration tests and more, you can rely on Moog Test Controllers for testing in a wide variety of applications.

Impressive Value.
The Moog Test Controller was designed with your bottom line in mind. The initial purchase, maintenance, and upgrade costs are all lower than the leading competition with direct comparisons.

Modular & Compact.
There's no job too big - or too small. Our modular design fits easily into any hydraulic or electric test system, large or small.

Easily Configurable.
The Moog Test Controller can be easily configured to fit your needs - because no two test labs are the same. Flexible number of channels with thousands of I/O combinations from four modular building blocks allow for unmatched customization.

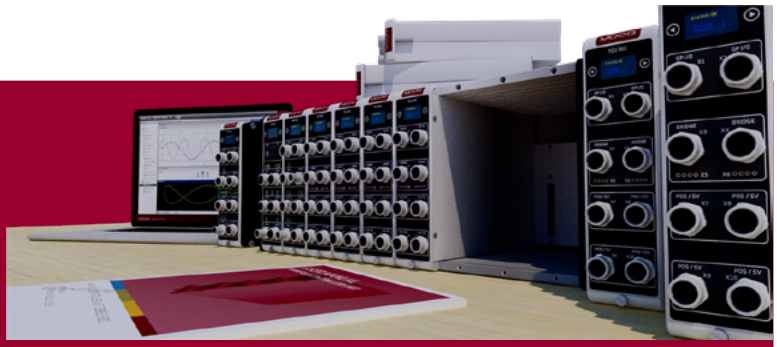
Expertise & Support.
We've seen it all. Moog expertise in test laboratories like yours ensures high value test results. With leadership and support in 26 countries, Moog delivers technology, innovation and service around the globe.

PRODUCT OVERVIEW

The Moog Test Controller is a real-time modular control system that can control or collect data from any hydraulic or electric test system. The robust and compact modules have a wide range of transducer inputs and control outputs that can be easily configured for optimum use. The Moog test software allows the end user to control and record all of these signals in an easy to use format providing maximum value for many years of reliable usage.

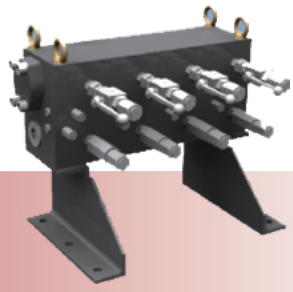
FEATURES	BENEFITS
Familiar feature-rich software: configurable hardware bindings, wizard for calibration, powerful control loops	No new training for current users; new users will appreciate the simplified interfaces that allow complex tasks with minimal training
Easier 1 piece modules	With less parts to manage, moving hardware between controllers is safer
Easier upgrades in future with CPU module and Manifold Control Unit	Modular design permits low cost upgrades to take advantage of rapidly improving technology or controller expansion
Higher density I/O per module	Lower cost per connection with more I/O packed into less space
Flexible I/O - Configurable Digital Input, Digital Output, Analog Input or Accelerometer (ICP)	One connection can be used to serve different functions giving you no added cost options as your test needs change
Easy channel expansion	Low cost controller expansion with space saving channel or data acquisition modules avoiding expensive racks with limited slots
Better 24-bit signal resolution	High resolution analog inputs providing high precision for control and data acquisition

REDEFINING PERFORMANCE THROUGH ADAPTED SOLUTIONS



- Hydraulic and Electric Simulation Tables
- Four Post/Tire Coupled Simulation Systems
- Performance or Buzz, Squeak and Rattle Vibration Test Systems
- Electric Multi-Axis Test Systems
- Hydraulic Multi-Axis Test Systems
- Structural Static and Fatigue Test Systems

SYSTEM OVERVIEW

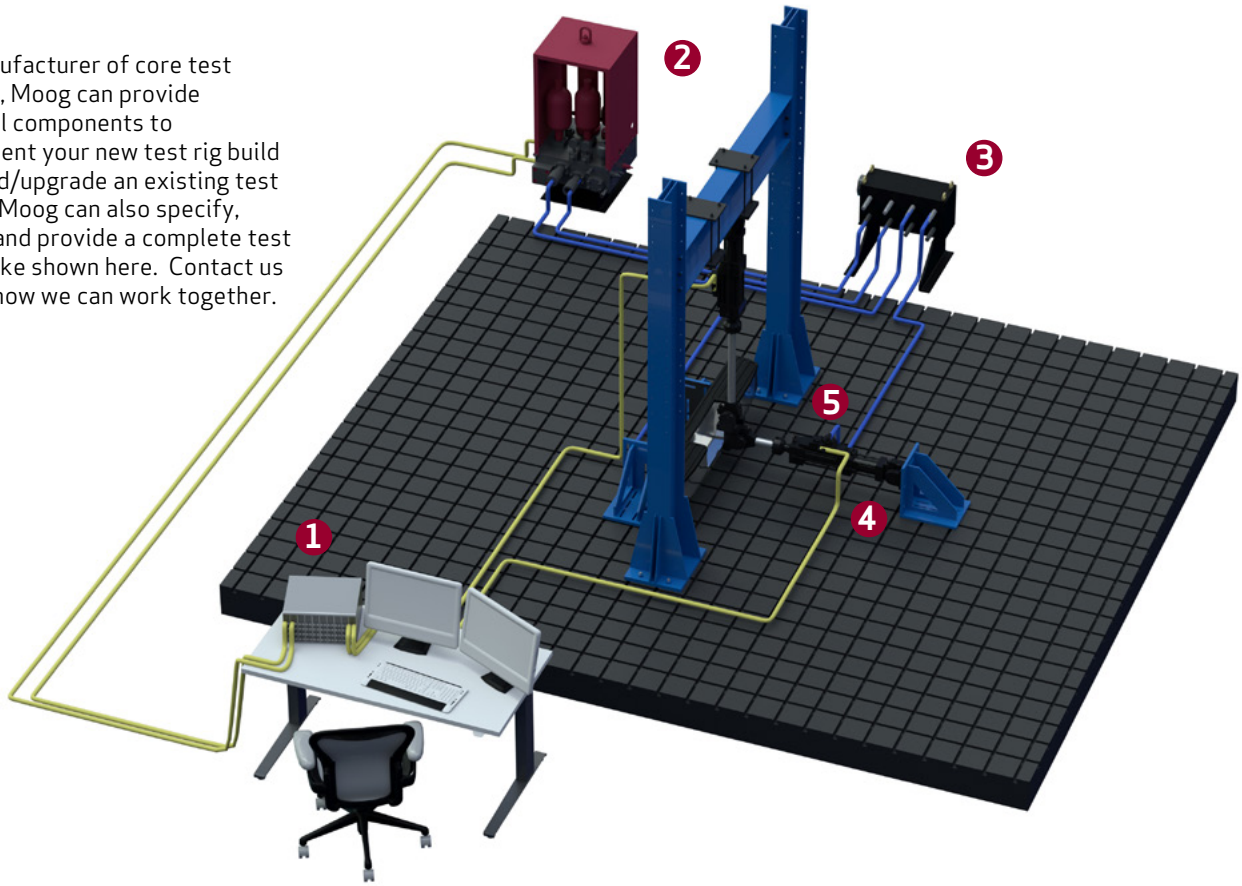


1 TEST CONTROLLER
1 to 500 channel safe, real-time modular system for control and data acquisition from any hydraulic or electric test system

2 HYDRAULIC SERVICE MANIFOLD
Off/Low/High/Pilot pressure control with adjustable pressure transition. Several flow rating sizes with up to 4 station options available

3 DISTRIBUTION MANIFOLDS
With two flow capacities, pressure rated to 280 bar and up to 8 outlet ports, the distribution manifold adds organization and control to any hydraulic test rig

As a manufacturer of core test products, Moog can provide individual components to complement your new test rig build or expand/upgrade an existing test system. Moog can also specify, manage and provide a complete test system like shown here. Contact us to learn how we can work together.



4 HYDRAULIC TEST ACTUATORS
Choose from a family of fatigue-rated, single or double ended actuators from 5kN to 1137kN and 100mm to 1,000mm

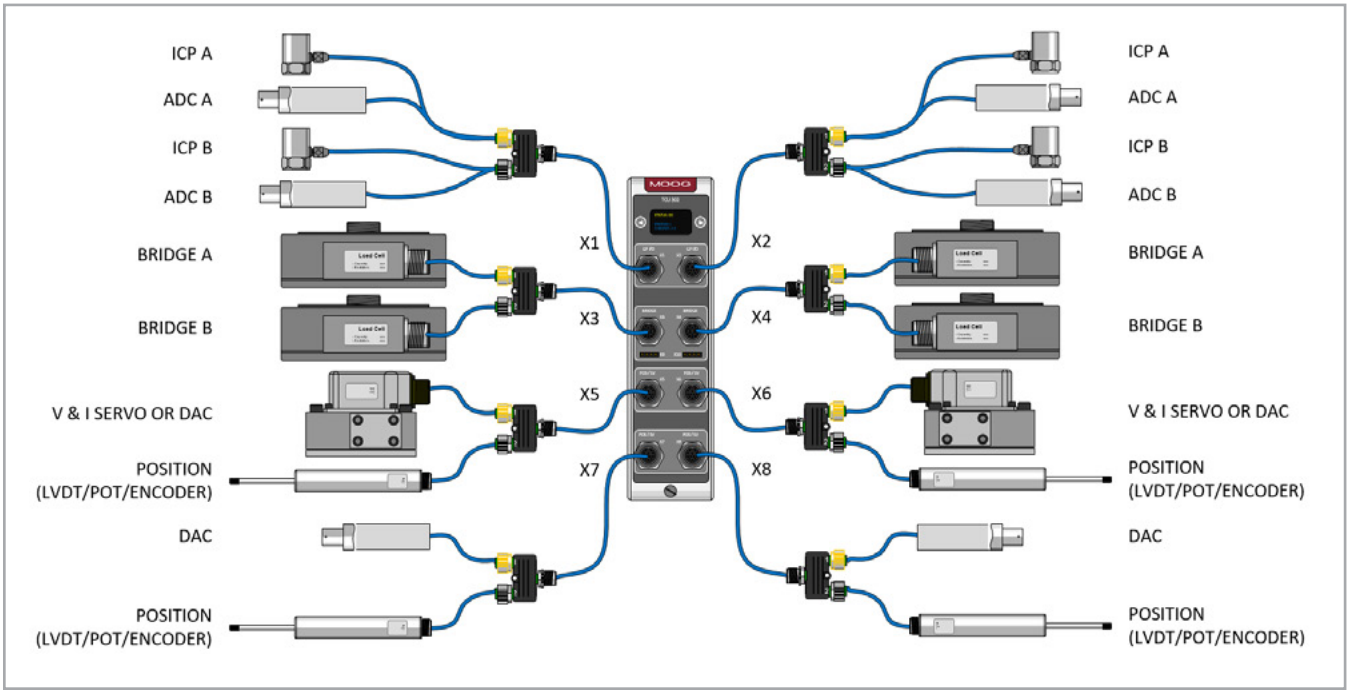
5 SERVO VALVE
Moog servo valves are most likely already in your lab. Contact us if you need more, a special application, or service to make it new again

TEST CONTROLLER UNIT (TCU)

The TCU is a dual channel digital servo controller which can be used in the Moog Test Controller. This unit has a high connection density to control hydraulic servo valves, read a wide variety of transducer signals and output analog test signals. It is a highly advanced controller which has a proven history of more than 16,000 units placed over 20 years worldwide.

FEATURES	BENEFITS
Fully enclosed	ESD protection, easy to swap and service
Ruggedized	Full aluminum enclosure which protects electronics from harsh environments
Small form factor	Reduction of >50% in cabinet space, more I/O fits into less space
Modular	Fits easily into a small single channel or large multi channel test system
Easy to install	No tooling required
Safety line integrated in fieldbus	No hard to configure safety chain between components
Integrated display/module	Immediate status and diagnostics feedback
Onboard control loop	Results in higher achievable control loop frequencies/channel
Dual EtherCAT and Ethernet interface	Control through real-time EtherCAT; DAQ through Ethernet
24 Bits on all inputs	Higher input accuracy
Input Bandwidth on all inputs 100 kHz	Simultaneous sampling
M12 Industrial standard connectors	High density, world wide availability
Integrated transducer power supply	Supply power directly from the unit, this reduces system complexity and cost
Wide range DC power input	Lower power consumption

The Test Controller Unit is equipped with a large amount of I/O to interface to various equipment such as servo valves and transducers. The I/O is divided across 8 different connectors located on the front of the module.



PERFORMANCE SPECIFICATIONS – TEST CONTROLLER UNIT

DESCRIPTION	SPECIFICATION
Supported Servo Channels	2
Max. Control Loop Speed/channel	Up to 6144 Hz
Power Supply	Wide range 20 V to 50 VDC
Bus-System	EtherCAT slave/master 100 Mbps; Ethernet 1000 Mbps
Accelerometer	
Supported Type	IEPE/ICP Accelerometer
Analog Input	
Input Signal Range	Voltage: ±10 VDC Current: ±20 mA (activated through internal shunt resistor)
Input Resolution	24 bits simultaneous sampling
Bridge Input/output	
Input Signal Range	+/- 10 VDC (max +/-12 VDC)
Input Accuracy	<0.1% full scale
Input Resolution	24 bits simultaneous sampling
Input Programmable Gain	1/8 to 128, in 11 steps
Supported Bridge Types	Full
Supported Number of Bridge Wires	4-wire, 6-wire, 7-wire, 8-wire (physical 7-wire interface; internal/external shunt +/- possible)
Excitation Voltage	10 VDC +/- 1mV
Excitation Current	100 mA max
Load Cell Support/Excitation Drive	120 to 1000 Ω
Excitation Drift	10 ppm / °C
Internal Shunt Resistor	100 k Ω
External Shunt Resistor	1 connection/interface (4 total)
LVDT/Potentiometer/Encoder (Position) Input	
Input Signal Range	+/-10 VDC (7V RMS) max +/-12 VDC
Input Accuracy	<0.1% full scale
Input Temperature Drift	<0.23% full scale; <0.25% at highest gain
Excitation Signal Range	Potentiometer up to +/- 5 V (<+/-4 mV) max, +/- 50 mA LVDT +/- 2.0 Vrms or +/-3.5 Vrms (<=±1 mVrms) max at +/- 50 mA
Excitation Frequency	2.5 kHz or 5 kHz (+/- 5 Hz)
Wire Type Support	3-wire, 4-wire, 5-wire
Encoder Supported Types	SSI, relative (quadrature), Endat 2.2
Servo and DAC Output	
Servo Output Signal Range	+/- 100 mA / +/- 10 VDC
Servo Current Output Load	Between 0 and 100 Ω
DAC Voltage Output Signal Range	Up to +/- 10 V;+/- 25 mA
DAC Voltage Output Resolution	16 bits

I/O SPECIFICATIONS – TEST CONTROLLER UNIT

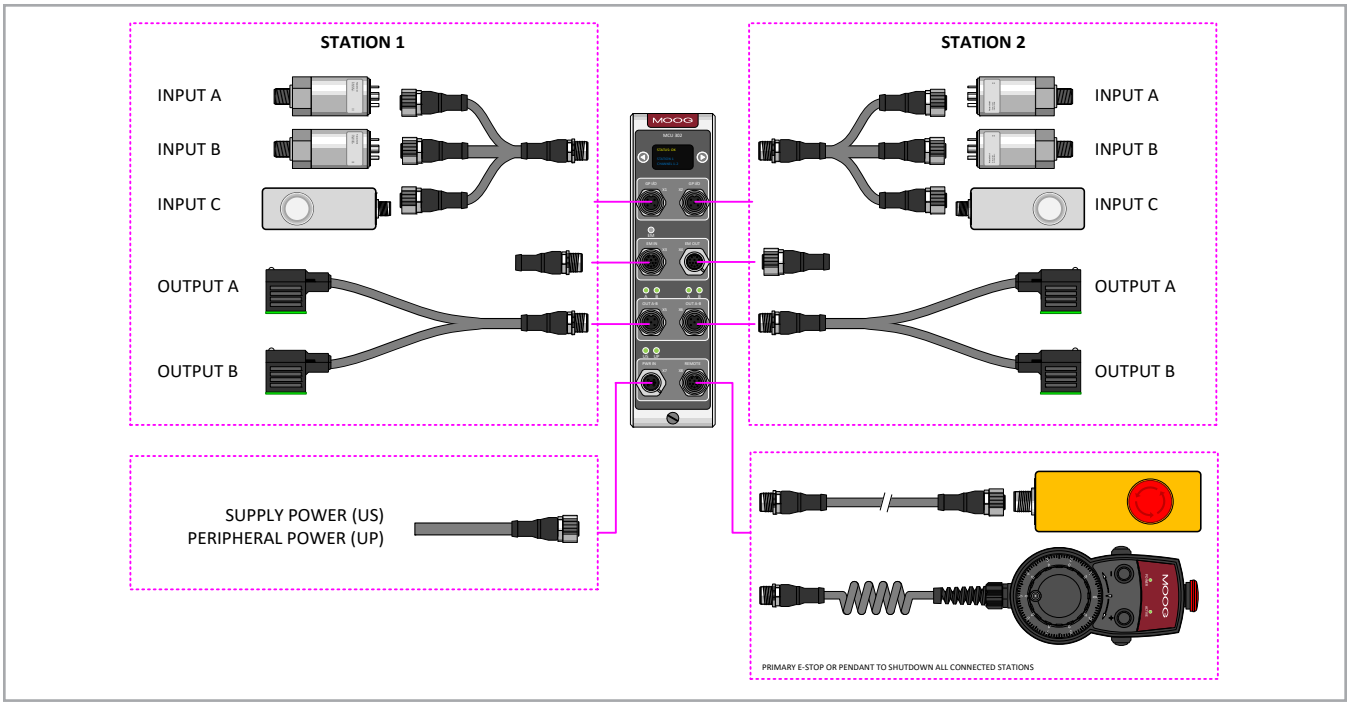
TCU	CONNECTOR	# OF INTERFACES	TYPE	COMMENTS
Accelerometer (ICP)	X1 and X2	4x	Input	ICP = Current Source Supply
Analog Input (ADC)	X1 and X2	4x	Input	Voltage or Current type input
Bridge Input	X3 and X4	4x	Excitation output Excitation Sense input Signal input	Voltage type input
LVDT or Potentiometer or Encoder	X5, X6, X7, X8	4x	Excitation output Signal input	Voltage type input
Servo or DAC	X5 and X6	2x	Servo current/voltage output Servo current read back DAC output	Voltage and current type output
DAC	X7 and X8	2x	DAC output	Voltage output

MANIFOLD CONTROL UNIT (MCU)

The MCU is a single or dual test station manifold controller with two (or four) independent outputs providing off/low/high voltage to hydraulic service manifold (HSM) solenoids. The high current output allows up to 4 total off/low/high outputs in parallel. The emergency stop button has a dedicated connection and turns off all HSM outputs.

FEATURES	BENEFITS
Fully enclosed	ESD protection, easy to swap and service
Ruggedized	Full aluminum enclosure protects electronics from harsh environments
Small form factor	Reduction of >50% in cabinet space, more I/O fits into less space
Modular	Fits easily into small single channel or large multi channel test system
Easy to install	No tooling required
Safety line integrated in fieldbus	No hard-to-configure safety chain between components
Integrated display/module	Immediate status & diagnostics feedback
Control of a 1 to 4 stage manifold with a single unit	No need for additional power source or digital logic connections
18 Bits on all inputs	Higher input accuracy
Input bandwidth on all inputs 10 kHz	Simultaneous sampling
M12 industrial standard connectors	High density, world-wide availability
Integrated transducer power supply	Supply power directly from unit, reducing system complexity and cost
Wide range DC power input	Low power consumption
Emergency stop with internal safety relay	Safe shutdown in conformance with international safety standards

The MCU includes general purpose inputs that can be flexibly configured as analog or digital inputs. The diagram below shows a typical configuration with pressure switches and a station interlock, where only that station will shut down. The MCU connectors can be individually bound to the desired station. A pendant unit or an emergency stop button can be connected to the MCU for the module. The pendant gives actuator jogging control to the user during specimen installation. The I/O is divided across eight different connectors located on the front of the module. Additional MCU's can be added to the Moog Test Controller linked together or separate for up to two test stations each.



PERFORMANCE SPECIFICATIONS – MANIFOLD CONTROL UNIT

DESCRIPTION	SPECIFICATION
Analog or Digital Input	
Input Signal Range	Voltage: ±10 VDC Current: ±25 mA (activated through internal shunt resistor)
Input Resolution	18 bits simultaneous sampling
Digital Input Type	Source/Sink
Digital Input Range	0 - 28 VDC
Digital Input Threshold	Low <= 3 VDC, High >= 8 VDC
High Power Output	
Output Current	24 VDC @ Max 2.5 A/output
Proportional Definition	PWM Mode: 0 to 100%, Solenoid Mode: auto PWM
Digital Inputs or Outputs (when not connected to a Pendant)	
Digital Input Signal Range	0-30 VDC
Digital Output Signal Range	0-30 VDC (non-isolated)
Digital Output Current	Max 500 mA

I/O SPECIFICATIONS – MANIFOLD CONTROL UNIT

MCU	CONNECTOR	# OF INTERFACES	TYPE	COMMENTS
General Purpose Input (Analog or Digital)	X1 and X2 (GP-I/O)	1x	Input	Analog I or V, Digital
Emergency Input for E-Stop	X3 (EM-IN)	1x	Input	Analog I or V, Digital
Emergency Output	X4 (EM-OUT)	1x	Output	To link Multi MCUs
High Power Outputs	X5 & X6 (OUT 2x)	4x	Output	Voltage
Manifold Power	X7 (PWR-IN)	1x	Input	-
Digital Input/Output	X8 (REMOTE)	6x	Input/Output	Or to Connected Pendant

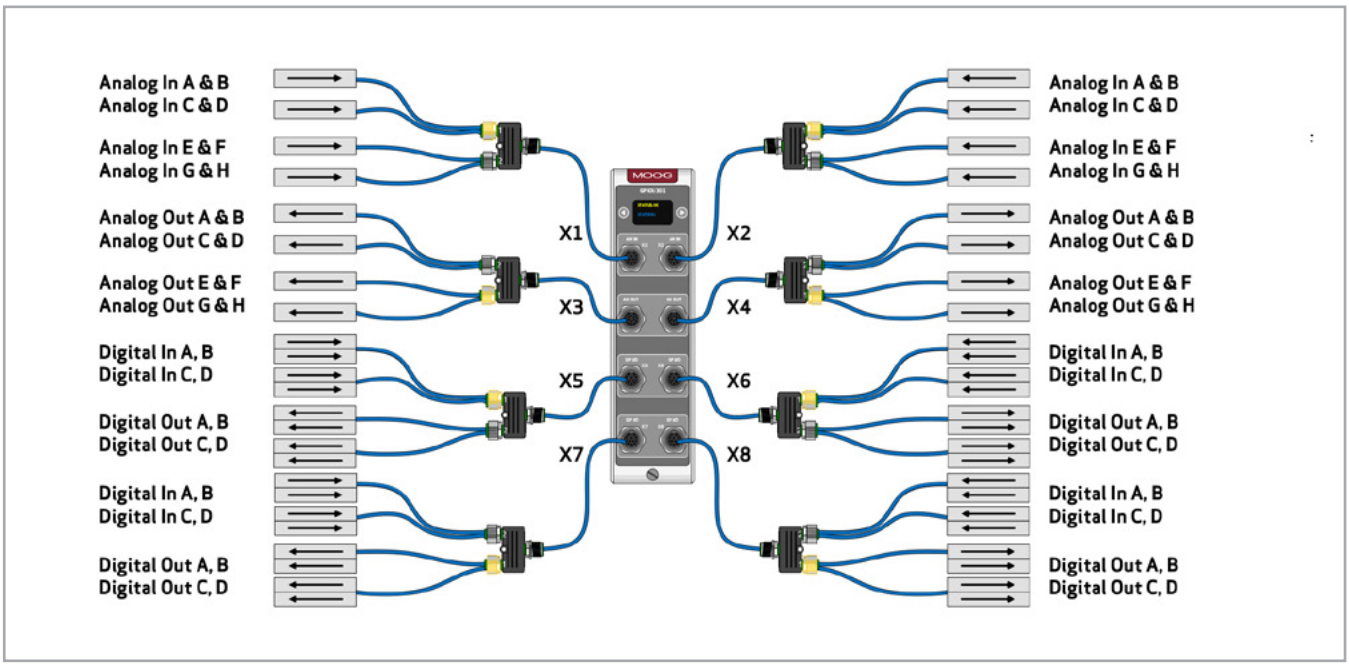
GENERAL PURPOSE INPUT/OUTPUT UNIT - (GPIOU)

The General Purpose Input/Output Unit (GPIOU) is a flexible module that provides 8 differential analog input and analog output channels (16 channel single ended) as well as 16 digital input and digital outputs all in one configurable module. This high channel density gives a cost effective tool to complement the other available control units for additional control or recording of data signals.

Its full aluminum enclosure makes it ruggedized and easy to handle. It's equipped with a display for immediate status and diagnostics feedback.

Communication with the module is achieved through EtherCAT and Ethernet interfaces, along with control power through the back of the module. The internal ZYNQ processor module provides power to run multiple control loops that can control external equipment or internal processes.

FEATURES	BENEFITS
Fully enclosed	ESD protection, easy to swap and service
Ruggedized	Full aluminum enclosure protects electronics from harsh environments
Small form factor	Reduction of >50% in cabinet space, more I/O fits into less space
Modular	Fits easily into small single channel or large multi channel test system
Easy to install	No tooling required
Integrated OLED display/module	Immediate status & diagnostics feedback
Dual EtherCAT and Ethernet Interface	Control through real-time EtherCAT; DAQ through Ethernet
Record or control 4 different types of transducers on a single unit	Configurable connections giving flexible value as test needs change
24 Bits on all inputs	Higher input accuracy
Input bandwidth on all inputs 50 kHz	Simultaneous sampling
M12 industrial standard connectors	High density, world-wide availability
Integrated transducer power supply	Supply power directly from unit, reducing system complexity and cost
Wide range DC power input	Low power consumption



PERFORMANCE SPECIFICATIONS – GENERAL PURPOSE INPUT/OUTPUT UNIT

DESCRIPTION	SPECIFICATION
Analog Input	
Connections	8x Differential (16x Single Ended)
Input Signal Range	Voltage: +/- 10 VDC Current: +/- 10 mA Diff, +/- 20 mA S.E. (activated through internal shunt resistor)
Input sample rate	Up to 100 kHz
Input resolution	24 bits simultaneous sampling
Analog Output	
Connections	8x Differential (16x Single Ended)
Voltage output signal range	Up to +/- 10 V; +/- 25 mA
Voltage output resolution	16 bits
Digital Input	
Connections	16x with common ground
Digital Input type	Source/Sink
Digital Input range	0-50 VDC
Digital Input Threshold	Low <= 3 VDC, High >= 4.5 VDC
Digital Output	
Connections	16x
Digital Output Signal Range	12 - 28 VDC (common ground)
Digital Output current	Max 1A per channel, 4A total for 16 channels

I/O SPECIFICATIONS – GENERAL PURPOSE INPUT/OUTPUT UNIT

MCU	CONNECTOR	# OF INTERFACES	TYPE	COMMENTS
Analog Input (AI)	X1 and X2	8x Differential or 16x Single Ended	Input- individually configurable	Voltage or current type, software configurable
Analog Output (AO)	X3 and X4	8x Differential or 16x Single Ended	Output- individually configurable	Voltage type, software configurable
Digital Input (DI)	X5, X6, X7, X8	16x	Input	Source/Sink
Digital Output (DO)	X5, X6, X7, X8	16x	Output	Required external power supply (24 VDC) Insulated High Side Driver

BRIDGE CONDITIONER UNIT - (BCU)

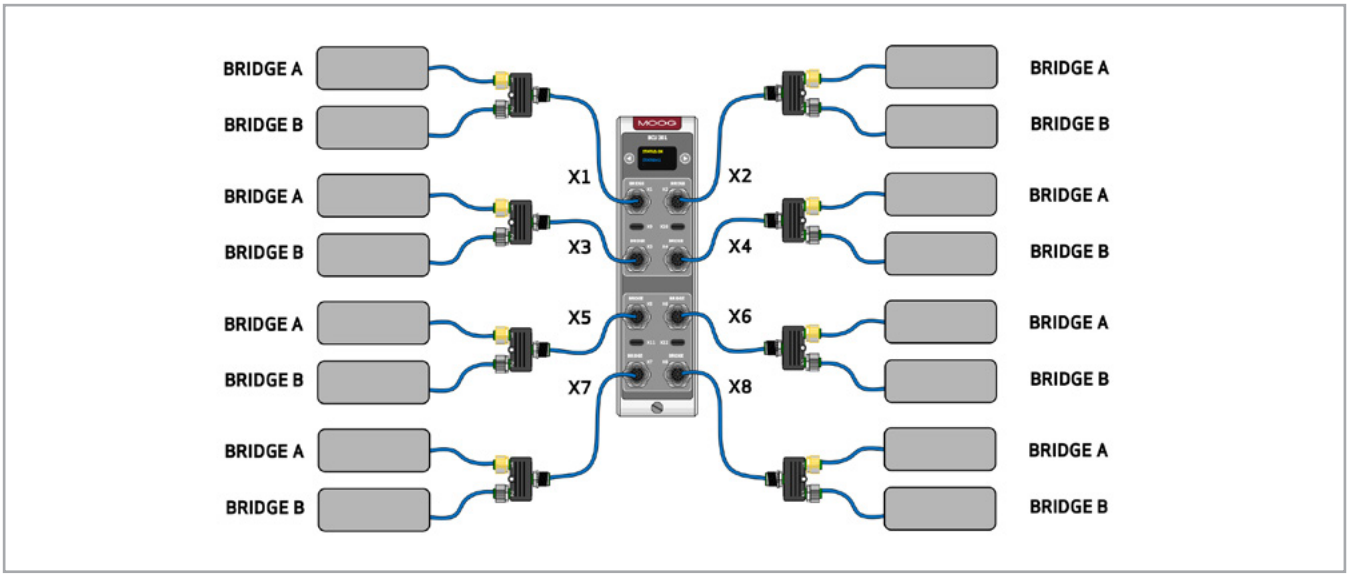
The Bridge Conditioner Unit is a flexible module that provides signal conditioning for up to 16 channels. It is designed primarily for Wheatstone bridge style sensors, but can be used on any high level signal-based sensor using 10 VDC excitation and output like a potentiometer or accelerometer. The strain gage-based sensors are compatible when wired in quarter, half or full bridge configuration. Each bridge type input is equipped with one internal shunt, one external shunt connection, and a connection for matched external completion resistors. This high channel density gives a cost effective tool to complement the other available control units for additional control or recording of data signals.

Its full aluminum enclosure makes it ruggedized and easy to handle. It's equipped with a display for immediate status and diagnostics feedback.

Communication with the module is achieved through EtherCAT and Ethernet interfaces, along with control power through the back of the module. The internal ZYNQ processor module provides power to run multiple control loops that can control external equipment or internal processes.

FEATURES	BENEFITS
Fully enclosed	ESD protection, easy to swap and service
Ruggedized	Full aluminum enclosure protects electronics from harsh environments
Small form factor	Reduction of >50% in cabinet space, more I/O fits into less space
Modular	Fits easily into small single channel or large multi channel test system
Easy to install	No tooling required
Integrated OLED display/module	Immediate status & diagnostics feedback
Dual EtherCAT and Ethernet Interface	Control through real-time EtherCAT; DAQ through Ethernet
24 Bits on all inputs	Higher input accuracy
Input bandwidth on all inputs 40 kHz	Simultaneous sampling
M12 industrial standard connectors	High density, world-wide availability
Integrated transducer power supply	Supply power directly from unit, reducing system complexity and cost
Wide range DC power input	Low power consumption

Cable design and manufacturing is critical to measure these small signals and isolate electrical noise from the outside environment. Moog has already designed and manufactured a wide variety of cost effective cabling options to meet your specific needs. Talk to one of our experts who will make sure all the equipment runs with the best performance.



PERFORMANCE SPECIFICATIONS - BRIDGE CONDITIONER UNIT

DESCRIPTION	SPECIFICATION
Number of Interfaces	16
Input Type	Differential
Input signal range	±16V AC or DC
Input programmable gain	1/8 to 176 in 22 software selectable combinations
Input sample rate	Up to 100 kHz
nput resolution	24 Bits simultaneous sampling
Supported bridge type	Full/Half/Quarter (quarter bridge is supported making use of the completion resistor connector for external bridge completion
Supported number of bridge wires	4-wire, 6-wire, 7-wire, 8-wire* (*physical 7-wire interface; internal/external shunt ± possible)
Broken wire detection	Yes (all wires)
Excitation voltage	Programmable; max ±10 V (±1 mV)
Excitation current	100 mA max.
Load cell support/excitation drive	120 to 1000 Ω
Internal shunt resistor	1 pcs; 100 k Ω (<10 Ω internal multiplex resistor)
External shunt resistor	1 connection/interface (total 4); (<10 Ω internal multiplex resistor)

II/O SPECIFICATIONS - BRIDGE CONDITIONER UNIT

DESCRIPTION	# OF INTERFACES	TYPE	COMMENTS
Bridge type inputs Full, half or quarter	16x	Input Individually configurable per in/output	Including -internal/external shunt -External shunt bridge completion

SOFTWARE TO MEET YOUR NEEDS

The Moog Test Controller includes the Moog Integrated Test Suite as the core to operating complex tasks in easy-to-use ways. Complementing the Integrated Test Suite software are several optional application packages to expand control, capability and test performance.

MOOG REPLICATION

Replicate time history files using state-of-the-art algorithms in an easy yet powerful way

MOOG RUNNER

Build complex, nested durability tests through simple instructions. Run and monitor the progress of the durability test and specimen

MOOG SINESWEEP

Measure the resonant frequencies of your test specimen. Run sine sweep durability tests

MOOG VIBRATION

Run real-time closed loop control to defined random vibration frequency spectra (PSDs)

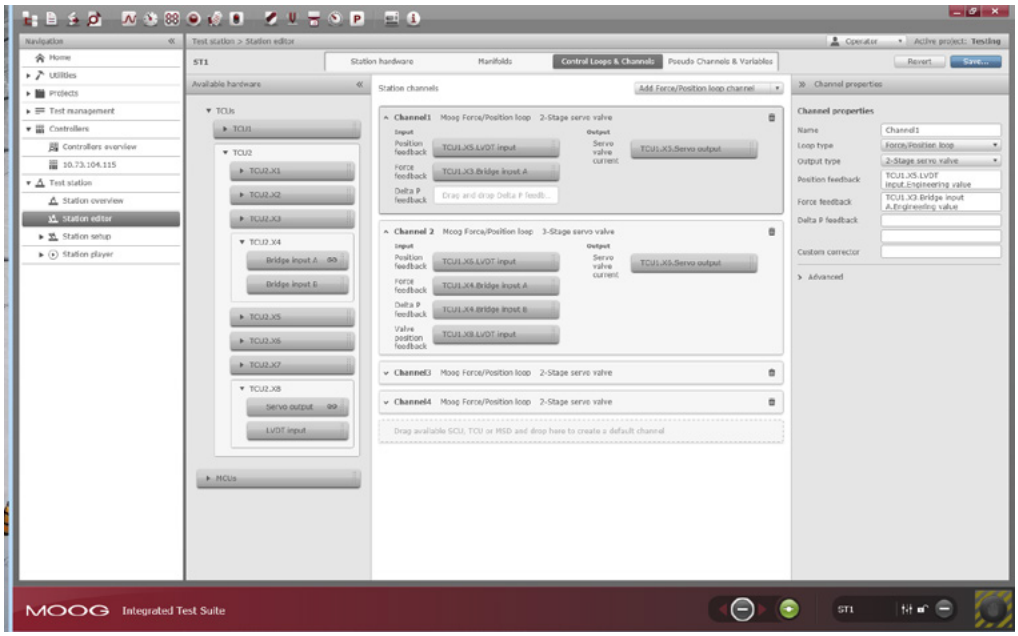
CONTROL YOUR TEST WITH THE MOOG INTEGRATED TEST SUITE

Configure, calibrate and tune equipment with easy-to-use setup screens and then build and play simple to complex test sequences for durability tests.

Key Features	User Benefits
Supports multiple test systems • Single and multi-axis hydraulic or electric test systems, Hydraulic Simulation Tables, Electric Simulation Tables, Tire Coupled Simulation Systems	**One controller platform for many uses** • User interface includes configuration, calibration, tuning and test players for strength, fatigue or vibration tests
Integrated suite • Utilize a variety of functions for simple or complex tasks	**User friendly and intuitive** • One learning curve for operating different test rigs • Supports less experienced operators or total control for advanced users • High value software without hidden extras • Additional capability with optional application software
Real time motion control • Multiple control loops, amplitude and phase matching, bumpless control switching, data acquisition	**Test accuracy and efficiency** • Optimal control and data recording across all channels minimizes setup and run time
Maximum access to configurable hardware • Bind the high density I/O needed to the test station, easily calibrate sensors	**Cost effective hardware and software combination** • High utilization of available I/O • Quick setup leads to more testing uptime
Customize your user interface • Multi-language support (9 languages including English, German, and Chinese) • Save/load user interface layouts (scopes/meters) • User authentication (levels of access)	**Efficient localization** • Preferred language • Time saving monitor sets • Control access to key information
Several players built-in to run your test • Cycle player- multi-axis phased operation with target matching and recording • Sequence player- create custom tests with ramp, cycle, drive file instructions, recordings and/or triggered actions	**One software package to run simple or advanced tests** • One user interface to run and monitor simple fatigue tests, or monitor complex tests with nested instructions, data recording, and dozens of triggered actions

CONTROL YOUR TEST WITH THE MOOG INTEGRATED TEST SUITE

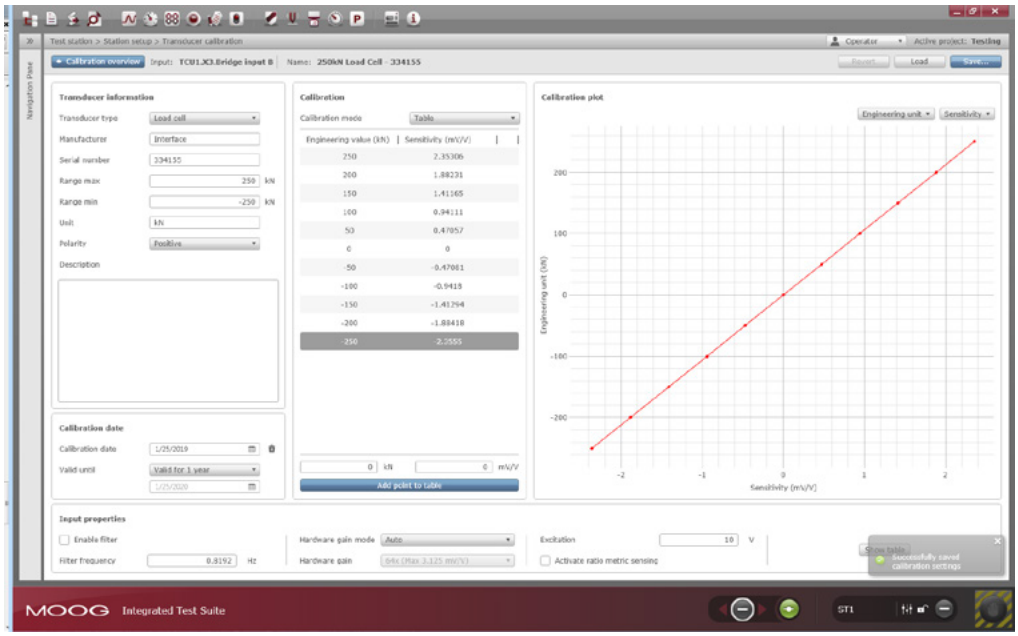
STATION EDITOR



This is the central place to configure the station hardware and software. The user adds specific hardware I/O, creates logical channels and desired control loops, and can add psuedo channels for calculations.

This flexible configuration tool allows the user to select from the available high density I/O and simply drag and drop the connections into the stations. These settings can be saved and later loaded to minimize manual steps.

TRANSDUCER CALIBRATION

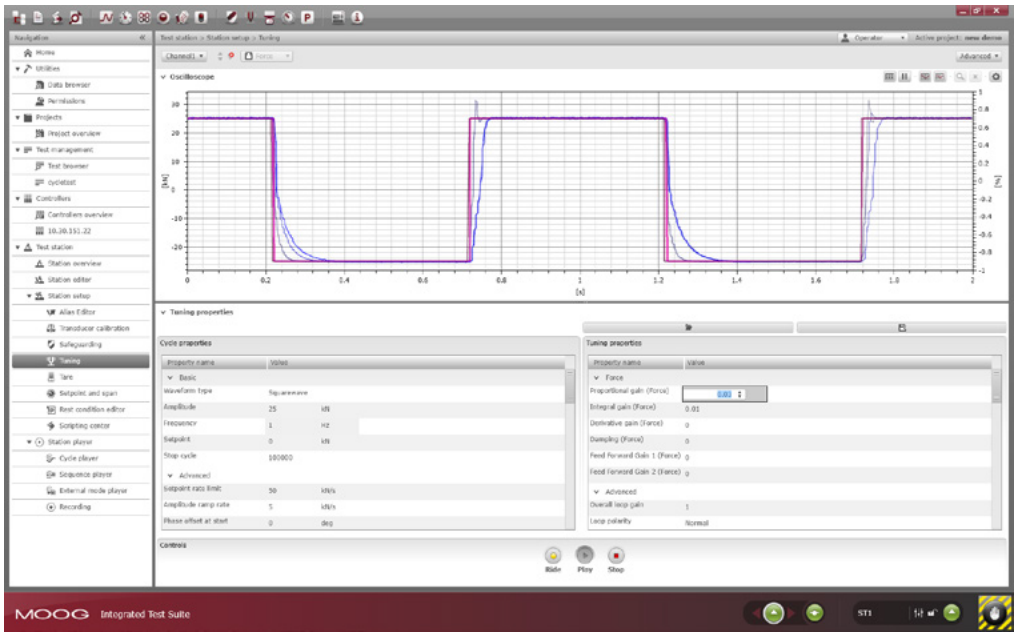


This area allows the user to convert sensor signals (voltages) into desired engineering units. A calibration wizard guides the user through the process in a simple way. Sensor sensitivity can be directly entered or calculated from up to 99 points for precise linearity.

Engineering unit entry allows the operator to change units as necessary without starting over, like from inches to mm and lbs to kN. All of the sensor calibration data can be stored for reuse.

MOOG INTEGRATED TEST SUITE

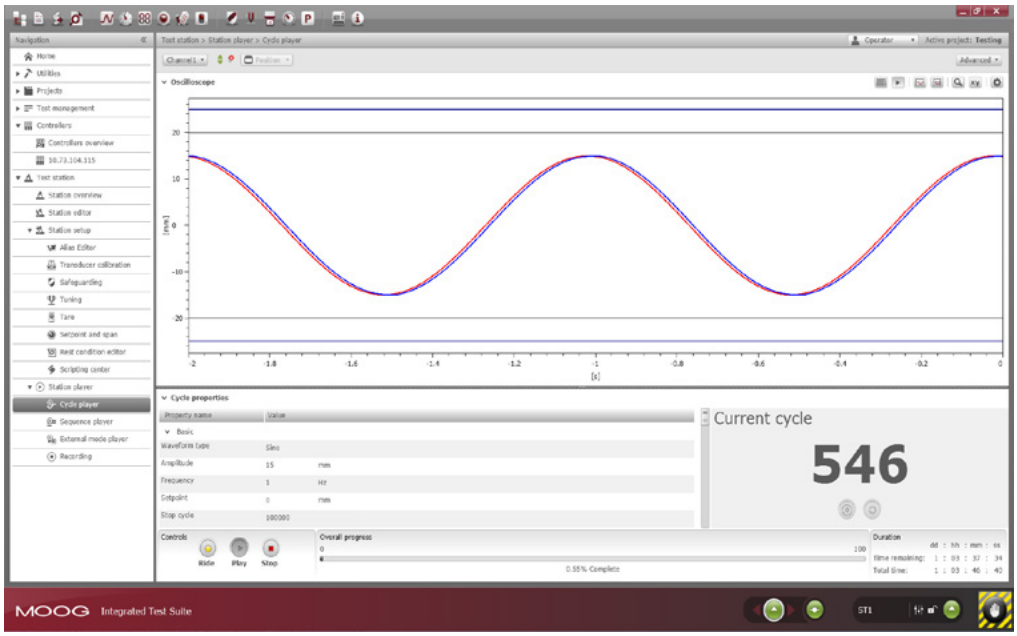
TUNING



The Tuning screens in the Integrated Test Suite allow the user to set a command signal and view the response of the feedback signal in real time.

The user can easily adjust the gains to minimize the following error for the various control loops like the PID loop, Moog force/position loop, PVA loop or Trimode loop. These loops can operate with two or three stage servo valves, and include advanced tuning parameters like feed forward terms and loop shaping filters. Moog uniquely provides a damping term which improves stabilization of force loops.

CYCLE PLAYER

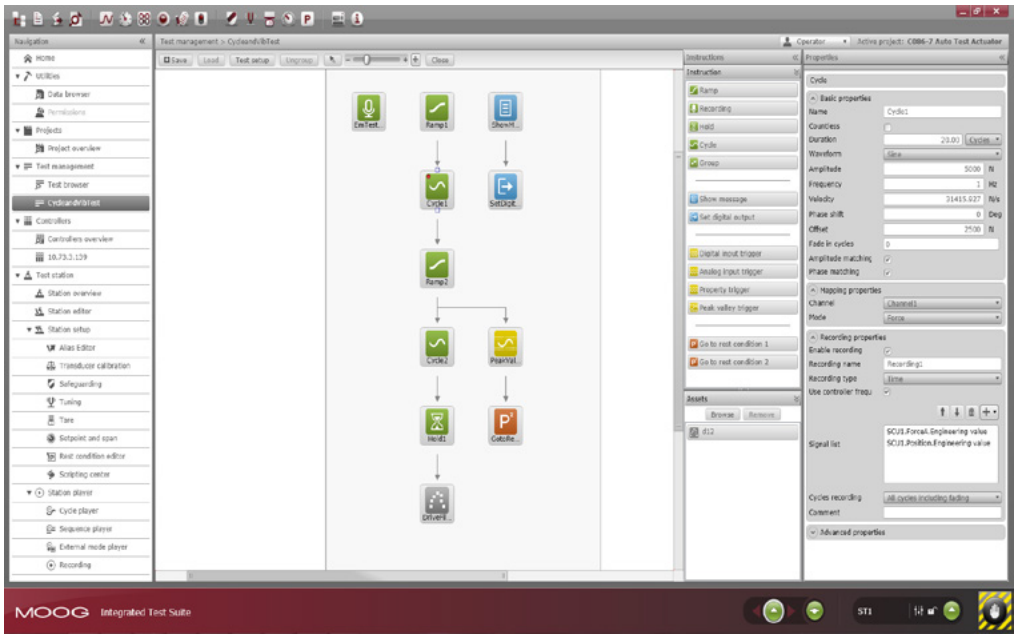


The Cycle Player puts all necessary information on one screen to command and monitor a cyclic test. Amplitude and phase matching controls automatically adjust the command signal to achieve targeted waveforms.

Monitoring of test progress is easy with a large cycle count display, a progress bar, and an oscilloscope. Recordings can be done at any time to store signal data for review or analysis.

MOOG INTEGRATED TEST SUITE

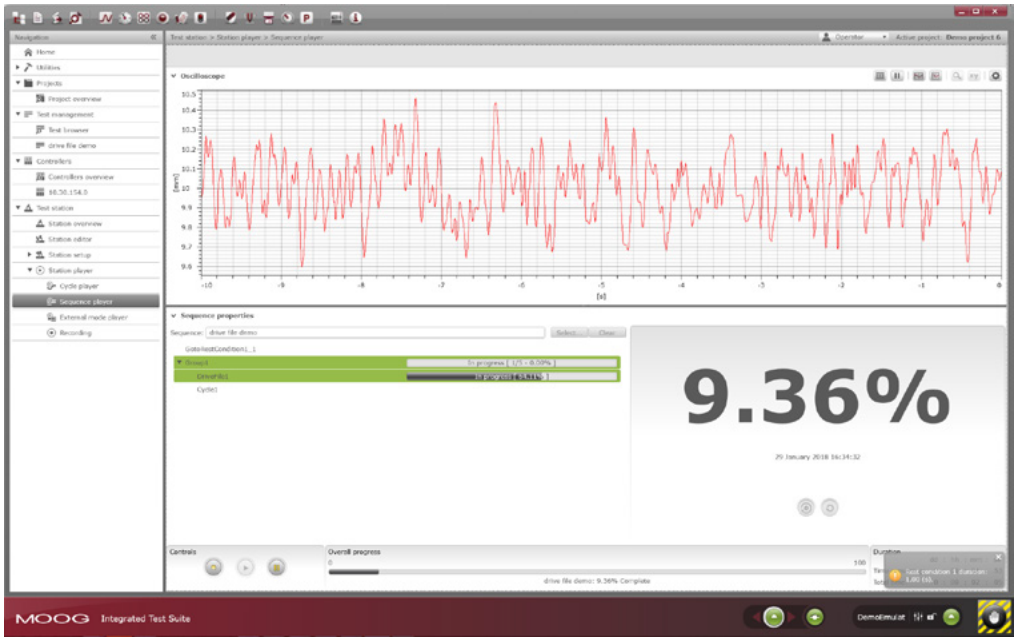
TEST BROWSER / TEST BUILDER



The Test Builder allows the user to quickly create and/or edit test definitions. Tests consist of instructions, actions, triggers, or assets like drive files. These instructions include items like ramp, recording, cycle, or grouping for nesting instructions.

The user can also select a command time history (drive file) to command a real time instruction. The instructions can include nested recordings or the data can be recorded in parallel with one or more instructions.

SEQUENCE PLAYER



The Sequence Player puts all of the necessary information on one screen to run a sequence of instructions and monitor data.

Monitoring of test progress is easy with a large percent complete display, a progress bar, and an oscilloscope.

A VARIETY OF APPLICATIONS

Test labs need a variety of capabilities and flexibility to perform tests with many different requirements.

The Moog Integrated Test Suite and Application Software gives you capabilities to develop successful tests that match your changing priorities and protect the test specimen.

Our expert approach to achieving reliable testing results using better hardware and software with electric and hydraulic technologies, ensures we can control the highest requirements and give you easy to use test equipment for the best value.

By understanding today's test trends and challenges, and listening closely to the needs of customers around the world, we provide the right tools and proactive expertise to make your test applications faster or perform farther than you ever thought possible.

ELECTRIC MULTI-AXIS TEST SYSTEMS

For design and production verification, Moog Electric Multi-Axis Test Systems are designed for efficient operation in a range of static or load/deflection tests to cyclic loading with test specimens like seat systems or door closures. These quiet systems are plug-in ready and have a lower total operating costs than equivalent hydraulic systems.

HYDRAULIC MULTI-AXIS TEST SYSTEMS

Hydraulic test systems are the foundation of high cycle structural durability fatigue tests on many test articles. Moog provides the necessary building blocks like test actuators, controllers and software that are built for years of reliable use. Most likely, you have been using our servo valve products on your test equipment for decades.

FOUR POSTER TEST SYSTEMS

Our Four Poster Test Systems include hydrostatic bearing test actuators for low friction, high velocity and high side load carrying capacity. Our systems are found in research labs where they are used for ride quality assessment and Noise, Vibration and Harshness (NVH) testing. They're used in durability test labs to validate selected body, chassis, and suspension designs. They are also used in production facilities to assess squeak and rattle concerns.

HYDRAULIC AND ELECTRIC SIMULATION TABLES

The Hydraulic Simulation Table provides acceleration or displacement inputs to reproduce time history data collected on proving grounds. Test samples generally include body mounted components or systems like EV batteries, engine mounting systems, cooling modules or cockpits.

The human rated Electric Simulation Table, with the small Stewart platform footprint, incorporates electric actuators to deliver 6 degree-of-freedom motion. The test controller plays vibration spectra or time histories to provide exact control for comfort evaluation.

TEST PRODUCTS

Moog engineers are always ready to meet your unique application needs with building blocks or complete turnkey systems that include hydraulic and electric test actuators, servo valves, hydraulic service manifolds, test controllers, software and more.

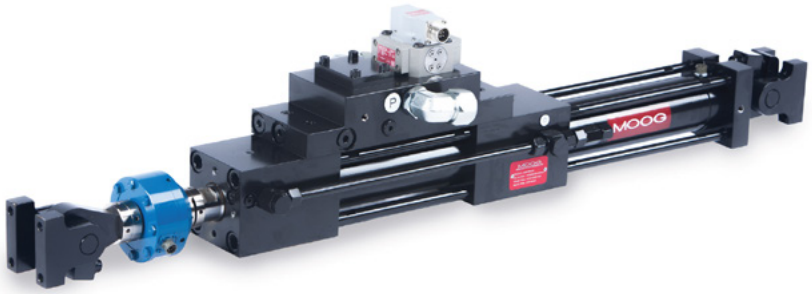
HYDRAULIC SERVICE MANIFOLDS

The Moog Hydraulic Service Manifold (HSM) provides on/off hydraulic pressure with an adjustable transition from off to high pressure. Filters protect sensitive servo valves and accumulators provide instantaneous flow or pressure damping when needed. Several flow-rating sizes with 1 to 4 station options are available.

SERVO VALVES

Because we design our renowned Moog Servo Valves, the world standard in performance and durability, you're assured of a system tailored to your exacting requirements.

HYDRAULIC TEST ACTUATORS



Fatigue rated actuators are the heart of high performance test systems. For years, test engineers have been looking for actuators that deliver dependability, less maintenance and high performance, yet are available at an affordable price.

ELECTRIC TEST ACTUATORS WITH SERVO DRIVES

Moog provides electric actuators with appropriately sized servo drives to meet displacement, velocity and force requirements for each test application. These matched pairs are plug-in ready and connect to a test controller through only an EtherCAT network connection.

SERVICE AND SUPPORT

Five Point Inspection Process

Our number one goal is to eliminate downtime and make repairs that will deliver reliability and cost savings for years to come. When you send in your repair, it must work like new when you get it back. This is the Moog Global Support® promise.

• Incoming inspection will provide the customer details on the performance of the assembly. For actuators it could be leakage or response. For electronic modules it could be a non-functional connection. The inspection will also provide details to our technicians in regards to critical performance specs that need to be addressed.

• Technicians will then review engineering notes for any design improvements that may have been initiated since inception.

• Servo valves are removed and sent through the same rigorous evaluation, disassembly and test.

• Finally, the individual component or assembly will be tested to original specs to ensure the overhauled unit meets all design and performance criteria as if it were new.

Moog Engineering On Call For You

In today's competitive manufacturing environment, machine performance plays a significant role in determining your bottom line. Moog Global Support is key to achieving cost-effective machine operation, day in and day out.

We are committed to providing world-class motion control products and solutions, taking customer support far beyond the initial sale. Our dedicated approach solves your problems, addresses your machine challenges, and allows you to achieve maximum productivity on a daily basis.

Repair Capabilities

Moog Global Support® is designed to keep your critical machines up and running at peak performance with only 100% genuine Moog replacement parts. Only Moog replacement parts can deliver the reliability, versatility and long life that you would expect from a world leader in motion control solutions. Each Moog part delivers essential components with precise dimensions, close tolerances and specifications. Because we understand the key role our parts play in the overall operation of your machine, we carefully inspect and test each repair to identify only those components that need replacement.

The Moog Difference

It's time you worked with a partner who can offer both the world-class products you desire and collaborative expertise you need to reach the next level of performance. Contact us today to see the difference Moog can make.

THINKING ABOUT AN UPGRADE?

Our servo valve products include cleaning, repair and trade-in programs to keep you running or using the latest technology.

Our software maintenance agreements keep you up-to-date with the latest features, stabilizing updates, and ease-of-use improvements.

Our control hardware includes updates to processors, storage space, and multi-range conditioners as changes occur to add years of useful life to your initial purchase.

Do you have an analog test controller? Moog can provide a digital controller to provide commands to the existing controller as a transition to full digital or a drop-in replacement in one step. Why not take advantage of the many features digital controls can bring to your tests like advanced control loops and sequenced tests, built-in data acquisition, and settings that can be saved for future use. Contact Moog for more details!

TAKE A CLOSER LOOK.

Moog designs a range of products that complement the performance of those featured in this catalog. Visit our website for more information or contact the Moog facility nearest you.

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