DMT

MUSCLE STRIP MYOGRAPH SYSTEMS

Cardiac diseases • Cardiac research • Skeletal Muscle research • And more...

MUSCLE STRIP MYOGRAPH SYSTEMS - GENERAL

Myograph Systems for striated muscle are the newest additions to the DMT product line and we are actively developing new models. Our goal is to provide researchers with specialized high quality research instruments as well as multi-chamber screening systems. In these systems, pieces of solid muscle are clamped between a mounting support and a force transducer.

Striated muscle, in contrast to smooth muscle, typically requires an electrical current or excitation to initiate contraction. It operates at an optimised length or preload. The contractions are often much faster than those found in smooth muscle and require robust force transducers with high fidelity. With analysis, the contractions are often transient and speciality software is needed to analyse the tissue response for both contraction and relaxation parameters.

DMT allows for a variety of mounting options in these systems; some based on customer requests. Striated muscle such as cardiac and skeletal muscle can be studied in combination with stimulators that can deliver enough power to excite this tissue in a reproducible way. The 820MS and DMT Stimulator CS4/CS8 combination is an example of such a system.

There is also much research investigating the molecular basis of muscle contraction. Measurement of force in a skinned muscle preparation is the preferred method to allow investigator control over the environment and composition of the contractile unit. The measured forces are then much smaller and require special transducers.

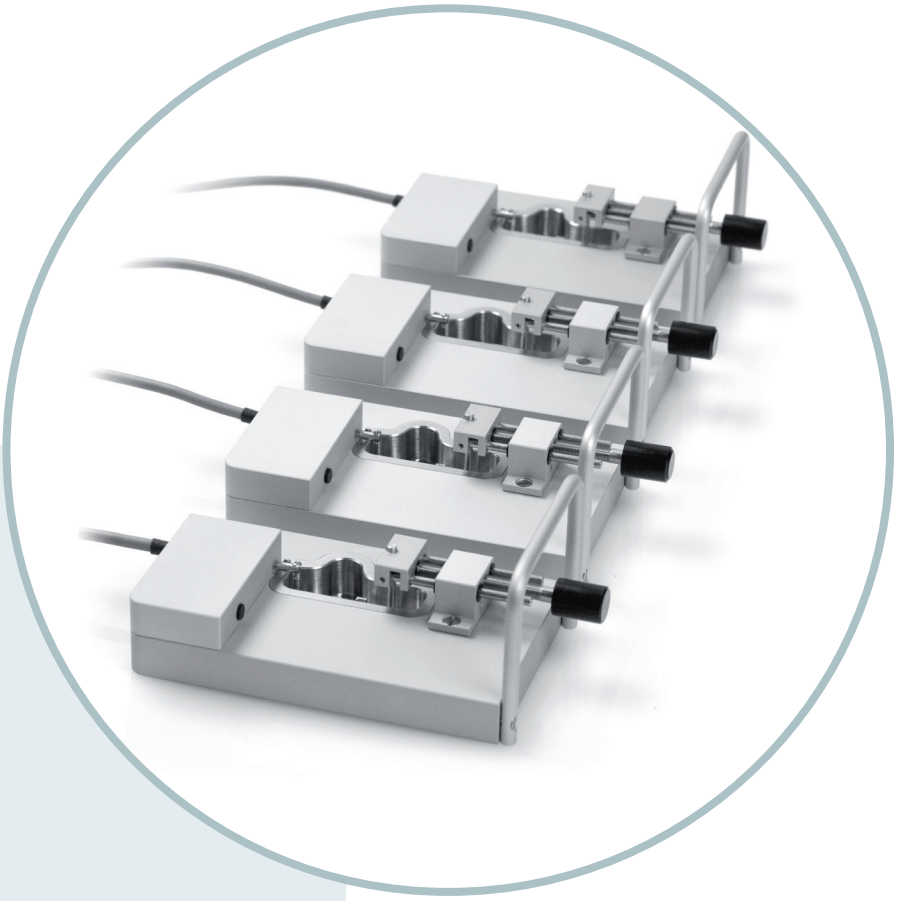
Because of the varied needs in skeletal muscle research, DMT is currently working with a group of industry partners to develop and widen the number of systems we offer to address the many different areas of striated muscle research. Contact us for further details if you would like to be a part of the development process.

BASIC PROPERTIES
- Isometric contraction
- Length-tension measurements
- Force transient analysis
- Muscle mechanics
- Relaxation-contraction kinetics

PHARMACOLOGY & PHYSIOLOGY
- Myosin-actin function modifiers
- Ion channel modulators
- Skinned smooth muscle
- Skinned striated muscle

PATHOLOGY & PHENOTYPING
- Transgenic animal muscle phenotyping
- Diseased muscle function
- Acquired or genetic muscle diseases

FURTHER POSSIBILITIES
- Combine with electrophysiology, EMG
- Combine with Ca^{2+}, ATP assay



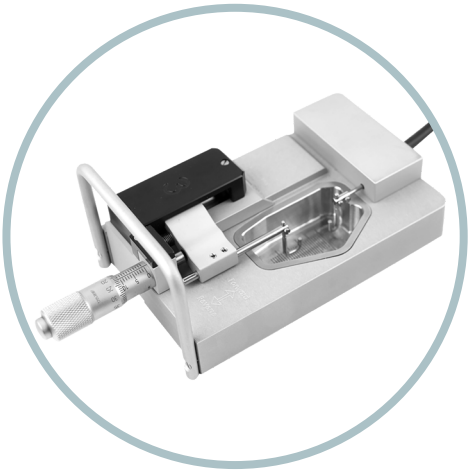
MUSCLE STRIP MYOGRAPH SYSTEMS - PRODUCTS

MUSCLE STRIP MYOGRAPH SYSTEM - 820MS

The Muscle Strip Myograph System - 820MS represents a state-of-the-art 4-channel Myograph System for muscle strips of up to 19 mm in length. The system was originally developed to give the skeletal muscle physiologist a highly sophisticated, easy-to-use, robust, high-throughput muscle myograph. The rectangular design of the chamber, however, gives this system the flexibility to mount larger, longer muscle strips of various organs, including larger segments of smooth muscle.

- For use with skeletal or cardiac muscle or strips of other muscle types up to 19 mm in length
- Up to four muscle strips can be examined under isometric conditions simultaneously
- Built-in heating, oxygen and suction ports
- Force output is available as direct analog transducer output
- The unit can easily be used with the DMT Stimulator CS4/CS8
- Optional add-on of the Automatic Buffer Filler System - 625FS allows semi-automated filling of all four chambers

MYODYNAMICS MUSCLE STRIP MYOGRAPH SYSTEM - 840MD



The MyoDynamics Muscle Strip Myograph System - 840MD represents a state-of-the-art 4-channel myograph system for muscle strips of up to 30 mm in length. The system was originally developed to give the skeletal muscle physiologist a precise, easy-to-use, high-throughput muscle myograph with the capacity to stretch and retract the muscle under a range of conditions including electric field stimulation.

- For use with skeletal and cardiac muscle and strips of other muscle types up to 30mm in length
- Programmable motor for stretching/retracting a mounted muscle 10µm up to 11mm
- Simultaneously examine up to four muscle strips under isometric conditions
- Individually built-in heating, oxygen and suction ports
- Water cooling circuit allowing working temperatures below room temperature
- Force output is available as direct analog signal output
- Compatible with the DMT Stimulator CS4/CS8
- Optional add-on Automatic Buffer Filler System - 625FS allows semi-automated filling of all chambers

TISSUE PULLER - 560TP

The Tissue Puller - 560TP is an economical tensometer that allows quick and easy determination of tensile strength in tissues. Characteristics like compliance and fatigue can be quickly evaluated with the real-time plot of the length-tension relationship of the sample tissue in the included software MyoPULL.

This is an easy-to-use tensometer that has the flexibility to measure the tensile properties in conduit arteries such as mouse and rat aortas as well as muscular strips with the use of interchangeable mounting pins for ring-like tissues or clamp mounts for strip-like tissues.

- A simple, easy-to-use economical single-channel system
- Ideal for quick, simultaneous measurements of biodynamic parameters such as compliance and fatigue
- Pin and clamp mounts facilitate the use of a mix of ring samples and strip samples
- Included software contains data acquisition and customizable, programmable settings for each pull
- Force transducer with a large range and high sensitivity for force detection

MUSCLE STRIP MYOGRAPH SYSTEMS - ACCESSORIES

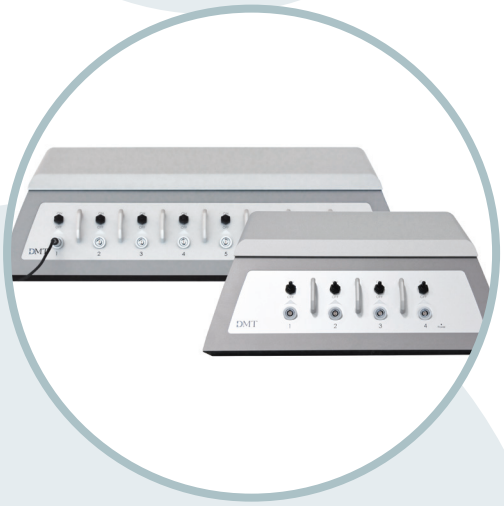
AUTOMATIC BUFFER FILLER SYSTEM - 625FS

The Automatic Buffer Filler System is easily 'clicked' onto your 4-channel Myograph System. The Automatic Buffer Filler System can fill one chamber of choice separately or all 4 baths simultaneously with buffer by a single touch of a button. The Automatic Buffer Filler System can apply two different volumes of buffer. The standard setting is 6 ml and 8 ml buffer. Other volumes, however, can be requested before time of delivery if the standard settings do not meet your needs.

STIMULATOR CS4/CS8

The CS4/CS8 stimulators combines a user-friendly interface with advanced electrical stimulation features required in electrophysiological experiments. The CS4/CS8 is a modular, highly versatile voltage stimulator suitable for use with all DMT Myograph Systems.

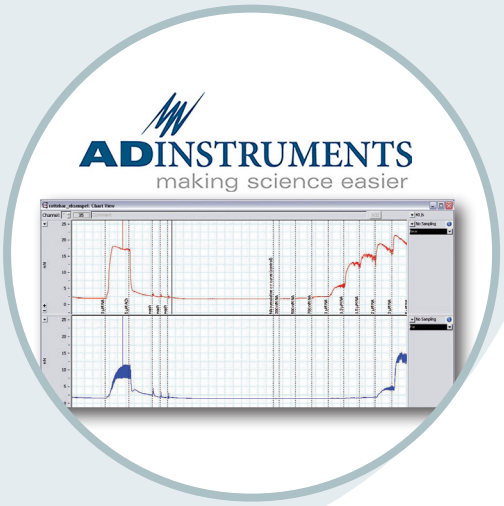
The CS4/CS8 stimulator is controlled by the MyoPULSE software which is a flexible software solution. In MyoPULSE one can program simple voltage single pulses and very complicated voltage trains stimulation protocols.



DATA ACQUISITION SYSTEMS

PowerLab with LabChart software.

The DMT Device Enabler allowing automatic recognition of the 820MS Muscle Strip System by LabChart, use of multiple DMT systems simultaneously, correct units and ranges in LabChart channels and simultaneous recording of data into LabChart alongside a PowerLab. The DMT Device Enabler allows streaming of data directly into LabChart.



Danish Myo Technology A/S

E-mail: sales@dmt.dk
Tel.: +45 87 41 11 00
Fax: +45 87 41 11 01

DMT-USA,Inc.

E-mail: sales@dmt-usa.com
Tel.: +1 734 707 0250
Fax: +1 678 302 7013

MUSCLE/07/2016