

MyoDYNAMICS MUSCLE STRIP MYOGRAPH SYSTEM - 840MD

- For use with skeletal and cardiac muscle and strips of other muscle types up to 30 mm in length
- Programmable motor for stretching/retracting a mounted muscle 10 μ m up to 11 mm
- Simultaneously examine up to four muscle strips under isometric conditions.
- Eccentric contraction for e.g. fatigue studies
- 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 allowing semi-automated filling of all chambers



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. The special design of the chamber, however, gives this system the flexibility to mount larger muscle strips of various organs and striated muscle up to 30 mm.

Each muscle bath unit, made of aluminium, features a stainless steel chamber. The tissue supports are positioned in the chamber with one side attached to the force transducer and the other to a combination manual positioner screw and a motorized micropositioner. The manual positioner allows the accurate setting of pre-load while the motorized micropositioner permits the user to stretch/relax the muscle according to user-defined settings. The sensitive force transducers provide measurement of isometric muscle contractions. Mounted tissue can be stretched and relaxed as defined by the user with a minimum distance of 10 μ m up to 11 mm and a maximum speed of 12 mm/sec. The 840MD system is perfect for eccentric contraction studies.

The Myograph comes with a unique tissue clamp system and hooks to hold the mounted tissues. Customized mounting supports can be made upon request.

Stimulation electrodes built into the chamber cover (optional) can be used to activate the muscle via field stimulation from DMT Stimulator's CS4 or CS8.

This Myograph is well suited for studies involving muscle reactivity and fatigue experiments in connection with neuromuscular disorders such as muscular dystrophy, ataxia and myofibrillar myopathies.

Multiple units, especially when supplemented with the Automatic Buffer Filler System - 625FS, can be arranged side-by-side to facilitate high-throughput screening, such as drug testing or for experiments requiring the separation of muscle preparations in individual baths.



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SPECIFICATIONS:

Chamber	Four individual chambers
Chamber suction	Manual or automatic
Chamber cover	Supplied with connections for gassing
Chamber gassing	Individually controlled per chamber
Chamber size	Standard 8 ml, max. 15 ml
Chamber material	Stainless steel
Chamber temperature range	Ambient - 40°C
Force range	± 200, 400, 800 or 1600 mN
Force resolution	0.1 mN
Max. segment length	30 mm
Min. segment length	2 mm
Max. micrometer reach	12 mm (manual)
Max. micrometer step	11 mm (motor)
Motor speed	0.5 - 12 mm/sec.
Resolution	0.1 mm/sec.
Speed tolerance	0.5%
Min. resolution of motor	10 µm
Distance tolerance	± 15 µm
Motor control	User defined protocols
Analogue outputs	4 BNC connectors
Analogue output range	± 2.5 V
Output impedance	<200 Ohm
Digital input	Two ports per chamber on the back panel
Voltage range	5-24 VDC, Min. pulse length is 5 ms, Galvanically isolated
Digital output	Two per chamber on the back panel, Voltage range max. 24 VDC, Max. current is 30 mA, Min. pulse length is 10 ms, Galvanically isolated
Air Connection	Max. 10 bar

TRANSDUCER DATA:

Max. range	± 1600 mN
Operating temperature	15 - 40°C
Frequency range	0 - 20 Hz

ACTIVE COOLING WITH WATER:

Amount of cooling water	50 - 300 ml/min.
Max. pressure	0.5 bar
Chamber temperature resolution	0.1°C
Chamber temperature stability	± 0.2°C

PHYSICAL DATA:

Voltage	100-240 VAC to 24 VDC
Dimensions	49 x 30 x 17 cm (LxDxH)
Net weight:	9 kg
Ambient temperature	15 - 30°C