

BICYCLE/ROWING TYPE ERGOMETER & CONTROLLERS

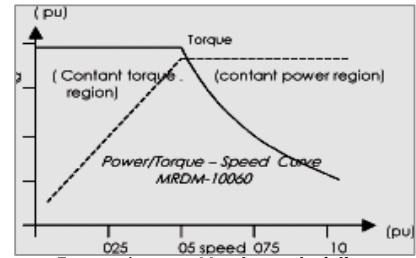
[A.C. TRANSIENT DYNAMOMETER-GRID INTERACTIVE BASED]

Introduction:

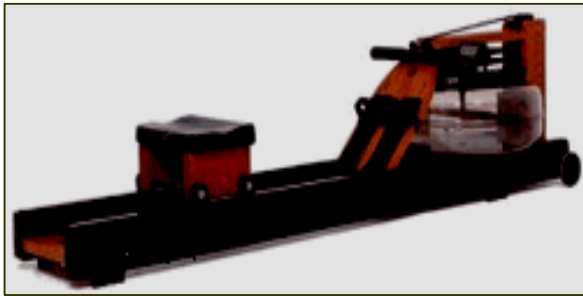
MEGM series of ergometers controllers are available in more than 25 routine models apart from occasional special requirement., virtually offering solutions to various applications like biomedical diagnostic, defense psychological studies, physiotherapy, sport fitness assessment, water sports exercise machines, and many other research & development applications. Ergometer controllers are cascade type feed back type control system and control the torque/power. These Ergometer displays principal parameter like power, rpm and torque as well as other inferential parameter like power/torque capacity, overload power/torque capacity, efficiency, plotting torque/speed and power/speed curve, desired phase trajectories on line. These fast responding ergometer posses least mechanical time constant, windage losses, least rheological problem, mechanical black-lash/ dead band, and exhibits a repeatable and hysteresis less Torque/Power Vs Excitation current characteristics which guarantees accurate identification of parameters during steady state/transient conditions with high degree of stability and resolution. These ergometers are compact and, dynamically balanced & vibration-less motion, inherent self-braking action and thus less hunting with maximum torque/k.watts.

Operating Principle:

In ergometers, a special metal drag cup rotor rotate under the influence of time invariant magnetic field or a magnetic field rotor rotates inside a cup type special metal stator (driver). In either case, the magnetic field intensity is controlled by a high frequency magnetic field feedback controlled chopper, which ensures a time invariant ripple free magnetic field. Rotor rotating under the influence magnetic field cuts the magnetic flux, by virtue of which there develops in it. This brake system may operate in constant power or torque mode. Power absorbed by ergometers and its Torque loading is as under....



$P = 0.438I_r^2 \times N^2$ and $T = 0.438I_r^2 \times N$



MEGM-100



MEGM-001



MEGM-003

ELECTRICAL SPECIFICATIONS OF ERGOMETERS

Power range < 100.0 K. Watts

Model	Power- range watts	R.P.M. X100	Torque n.m.	Volts AC	Amps AC	Tmax °C
MEGM-001	1000.0	30/15	3.1/6.2	220/440	2.0	60
MEGM-003	3000.0	30/15	9.3/4.6	220/440	4.0	60
MEGM-005	5000.0	15/09	31.8/53.0	220/440	6.0	70
MEGM-010	10000.0	15/09	63.6/106.0	220/440	10.0	70
MEGM-020	20000.0	09/03	127.2/381.6	220/440	15.0	60
MEGM-030	30000.0	09/03	190.8/574.4	220/440	20.0	60
MEGM-050	50000.0	09/03	318.0/954.0	220/440	30.0	70
MEGM-100	100000.0	09/03	1075.2/3225.7	220/440	50.0	70

ERGOMETERS CONTROLLERS SPECIFICATION:

Operating voltage 220 volts/110/48 volts A.C.
 Chopping frequency 50/400/1000 Hz (option)
 Excitation 0.0- 200.0 amps(max)
 Regulation better than 0.5 % of set speed
 Accuracy 99.5% of set point
 Repeatability 100 percent
 Response time 0.05 –10.0 sec with soft start
 Interface Signal 0.0-12.0 volts D.C.(proportional to torque)
 Step down ratio 1:50(1:100)
 Control option constant torque/Power mode with tripping
 Set torque/power/r.p.m.
 Display RPM/POWER/TORQUE/JULES in 3½ digit red glow LED
 Protection over/under voltage & r.p.m.

Ergometers Controllers Dimension(inches):

MEGM001	08X06X06	MEGM050	14X12X12
MEGM003	10X06X06	MEGM100	16X14X14
MEGM005	12X08X08	MEGM200	18X16X16
MEGM010	12X10X10	MEGM300	20X18X18
MEGM020	12X10X10	MEGM500	20X18X18
MEGM030	12X10X10	MEGM-750	20X18X18



mobile ergometer

Three numerals x 1000 after MEGM indicates power of ergometers Electronic controllers with tailor made specifications are also offered.

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