REGENERATIVE TYPE SEMI-ACTIVE SUSPENSIONS/CLUTCHES

ROTARY/LINEAR **MRDS-Series**

Introduction:

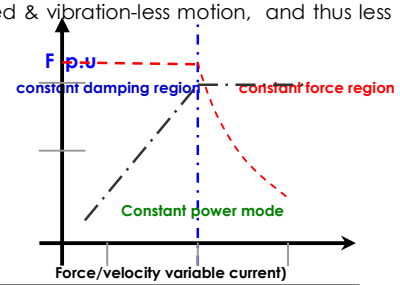
MRDS series of regenerative semi-active suspensions are available in more than 25 different models, virtually offering hybrid damping solutions to various applications like hoist, cranes, vibration control, excavation, off-shore petrochemical, automobile, railway, surface transport vehicles, non conventional energy management, intelligent machine tools, aerospace, nuclear, defense, physiotherapy/sport machines and many other research & development applications. M.R. controllers are cascade type feed back control system and controls the force of regenerative suspensions/clutches/suspensions/clutches/brakes with high degree of stability and resolution. These suspensions are compact and energy efficient, dynamically balanced & vibration-less motion, and thus less hunting with maximum force/volume.

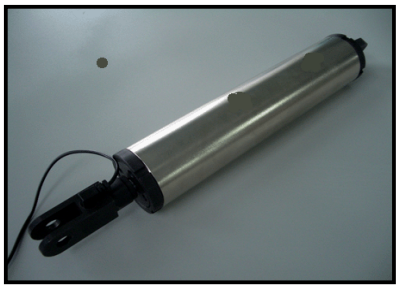
Operating Principle:

In regenerative suspension, the restraining force is generated on account controllable electromagnetic faraday force generated when special geometory rotor moves under the influence of multipolar stator. Generated e.m.f. is utilized /dispated in dedicated load in controlled manner. These damper provides effective vibration mitigation in range of 5-20 hz of large amplitude/low force noises.

These electromagnetic force/energy is as under….

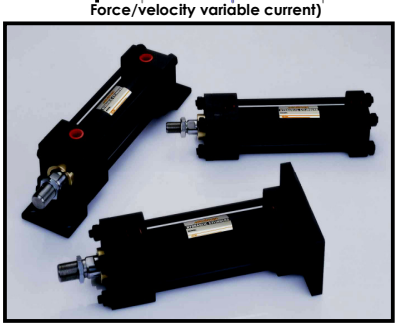
$$P = 0.438 I_f^2 Xf^{1.4} \text{ and } T = 0.438 I_f^2 xf^{0.4}$$





MRDSL-100

MRDSR-020



linear regenerative suspension

SPECIFICATIONs OF REGENERATICE SUSPENSIONS **Power range<10.0 K.Watts**

Linear suspension

Model	Power- range Watts x10^{-3}	Velocity m.m./sec	force n.m.x10
MRDSL-001	1000.0	30/15	3.1/6..2
MRDSL-003	3000.0	30/15	9.3/4..6
MRDSL-005	5000.0	15/09	31.8/53.0
MRDSL-010	10000.0	15/09	63.6/106.0
MRDSL-020	20000.0	09/03	127.2/381.6
MRDSL-030	30000.0	09/03	190.8/574.4
MRDSL-050	50000.0	09/03	318.0/954.0
MRDSL-100	100000.0	09/03	1075.2/3225.7
MRDSL-200	200000.0	09/03	2123.1/6369.4
MRDSL-500	500000.0	09/03	5307.8/15923.5

Rotary suspension

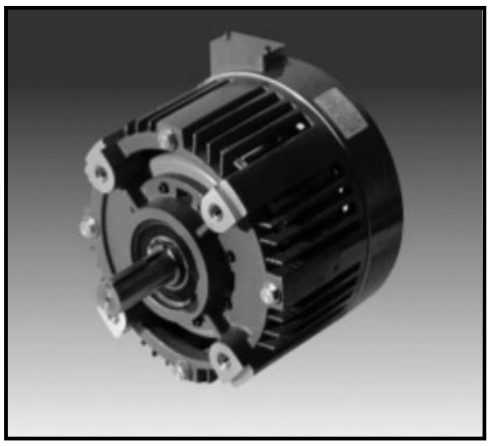
Model	Power- range Watts	R.P.M. X100	Torque N.m.
MRDSR-001	1000.0	30/15	3.1/6..2
MRDSR-003	3000.0	30/15	9.3/4..6
MRDSR-005	5000.0	15/09	31.8/53.0
MRDSR-010	10000.0	15/09	63.6/106.0
MRDSR-020	20000.0	09/03	127.2/381.6
MRDSR-030	30000.0	09/03	190.8/574.4
MRDSR-050	50000.0	09/03	318.0/954.0
MRDSR-100	100000.0	09/03	1075.2/3225.7
MRDSR-200	200000.0	09/03	2123.1/6369.4
MRDSR-500	500000.0	09/03	5307.8/15923.5

REGENERATIVE SUSPENSIONS CONTROLLER SPECIFICATION:

Operating voltage	220 volts/110/48 volts A.C.
Chopping frequency	50/400/1000 Hz (option)
Regenerative volt/current	0.0- 200.0/2.0 volt/ 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 force)
Step down ratio	1:50(1:100)
Control option	constant force/Power mode with tripping Set force/power/r.p.m.
Display	velocity/Force/power in 3½ digit red glow LED
Protection	over/under voltage & r.p.m.

Regenerative suspensionss controllers Dimension(inches):

MRDS001	08X06X06	MRDS050	14X12X12
MRDS003	10X06X06	MRDS100	16X14X14
MRDS005	12X08X08	MRDS200	18X16X16
MRDS010	12X10X10	MRDS300	20X18X18
MRDS020	12X10X10	MRDS500	20X18X18
MRDS030	12X10X10	MRDS-750	20X18X18



MRDSL-010

Three numerals x 100 0 after MECD indicates power of M.R.linear current controlled current /current 1. controlled. 2.Electronic controllers with tailor made specifications are also offered.

MOTORON SEMICONDUCTORS CORPORATION

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