

Motor Drives

Hositrاد can provide motor drive to almost all motion systems. We commonly mount 200 steps/rev (400 steps/rev in half step) stepping motors or synchronous motors. Micro-step and speed control motors are also available. We use double-ended motors to provide hand knob adjustment and/or encoder read-out.

Manipulator Motor Drive

Motor Drive, each axis

- /MS stepping or /MY synchronous
- X and Y axes motorized micrometer drive
- Z axis
 - FB, FM, EMC, EMX, Z, ZC
- Without motor controller

Worm Gear Rotary Drive Actuation

/MS/W or /MY/W Motor Drive

- Worm gear drive
- With /MS stepping or /MY synchronous motor
- Without motor controller
- Anti-backlash worm drive
- With manual knob

Ordering Information — Motor Drive Options

- FPRM, FRLC, WOA and FRRC Series

Motor Type	Model No.	Price
Stepping	/MS/W	on request
Synchronous	/MY/W	on request

Linear Drive Actuation

/MS/L or /MY/L Motor Drive

- For FRLC coaxial-linear
- With /MS stepping or /MY synchronous motor
- Without motor controller
- With manual knob
- Requires limit switch package

Ordering Information — Motor Drive Options

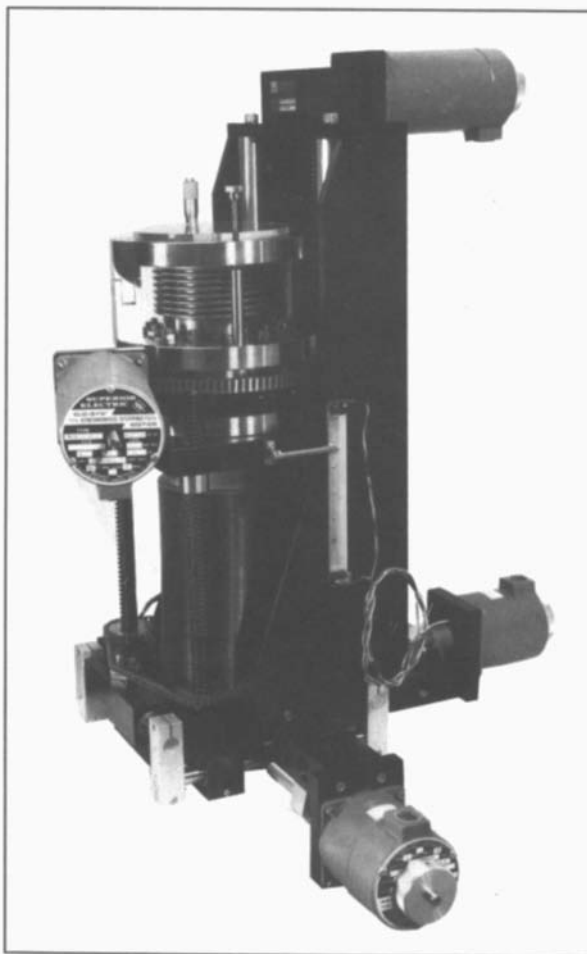
Motor Type	Model No.	Price
Stepping	/MS/L	on request
Synchronous	/MY/L	on request

SMC Stepping or YMC Synchronous Motor Controllers

Ordering Information — Motor Drive Options

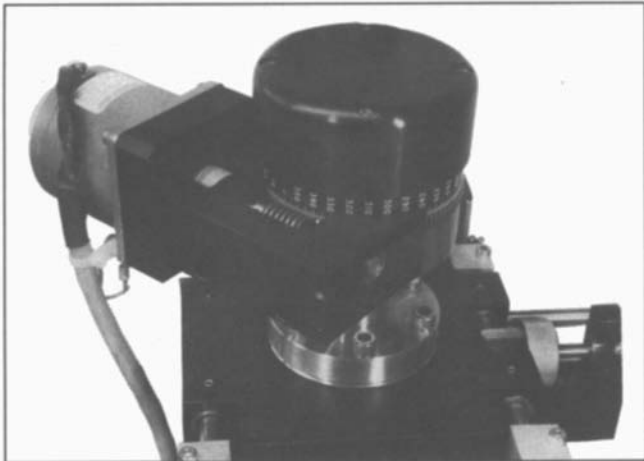
- FB, FM, TPM and EM Series manipulators
- FBT, EMT and LMAB Series translators
- FBXY, EMXY, EBXY and ECXY Series stages

Axis	Motor Type	Drive System	Model No.	Price
X	Stepping	Micrometer	/MS-XM	on request
X	Synchronous	Micrometer	/MY-XM	on request
Y	Stepping	Micrometer	/MS-YM	on request
Y	Synchronous	Micrometer	/MY-YM	on request
Z	Stepping	Acme	/MS-Z	on request
Z	Synchronous	Acme	/MY-Z	on request

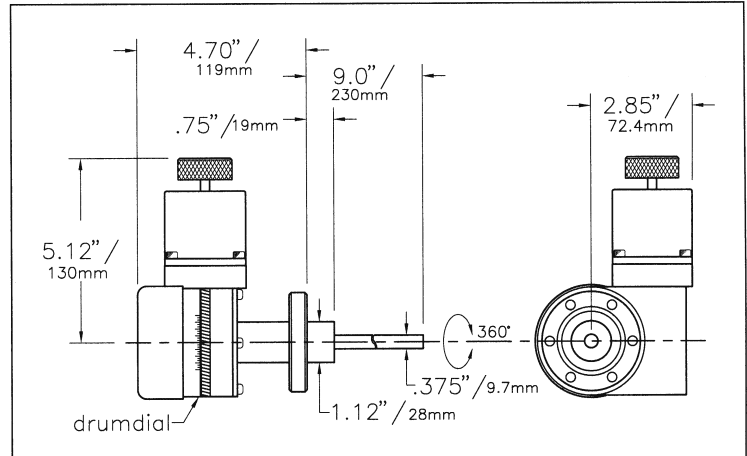


FB-104/MS-XB/MS-YB/MS-Z with RNN/MS

Motor Drives & Accessories



FPRM with /MS/W



FPRM-275-38/MS/W

Options

/LS Series Limit Switch Sets

- Mounted on sub-plates for easy dismount for bakeout
- We strongly recommend the use of limit switches on any motor drive. Consult the factory for custom limit switch applications
- Suitable for logic voltage only

Ordering Information — Limit Switch Sets

Axis	Switch System	Model No.	Price
X & Y	Dual Axis	/LS-XY	<i>on request</i>
Z	Single Axis	/LS-Z	<i>on request</i>

/EDR-200-0 Shaft Encoders

- Mounted to rear of drive motors
- Five VDC pulses, bi-directional (sine/cosine)
- 200 pulses per revolution (other counts/rev available)
- With "zero" pulse location
- Other types and mounting available

Price, per axis *on request*

/ZPI Zero Position Indicator

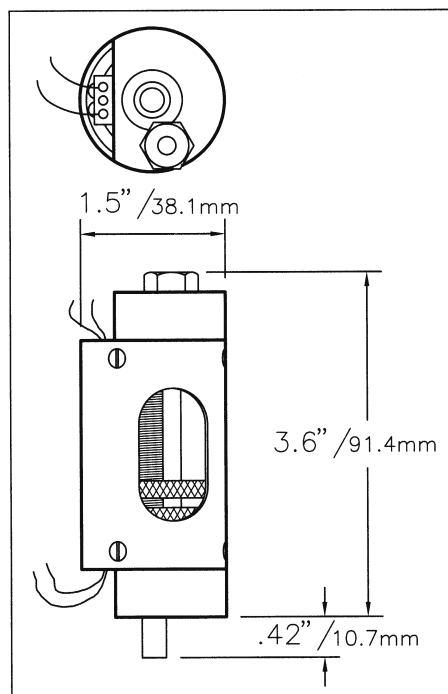
- Slit/photo-diode principle
- Indicates stage position to within approximately 0.015"
- Couple with "zero" pulse from encoder to establish unique system zero position
- Includes mounting and wire pigtail

Price, per axis *on request*

/OPS Origin Position Indicator

- Mechanical switch
- Located at mid-travel
- Includes mounting and wire pigtail
- Available for most motor drives

Price *on request*



/RLS-40

/RLS Series

Adjustable Rotary Limit Switch

- Supplies limit switch protection to multi-turn rotary feedthroughs
- Adjustable, one turn to maximum
- Switch contact ratings: 5 A
- Compact unit: 1.5" O.D. stainless steel body
Length determined by maximum number of turns
- 1/4" O.D. input shaft
- All ball bearing operation
- Without mount

Maximum Turns	Model No.	Price
40	/RLS-40	<i>on request</i>
100	/RLS-100	<i>on request</i>
200	/RLS-200	<i>on request</i>
500	/RLS-500	<i>on request</i>

/AD Adaptor Option

- Allows mounting of /RLS Series rotary limit switch to motorized FPRM-133/MS/W or /MY/W
- Includes drive gear

Price *on request*

/MO Mount Option

- Allows mounting of /RLS Series rotary limit switch to rear shaft of MO60 Series stepping motor
- Aluminum construction
- Includes shaft coupler

Price *on request*



Stepping Motor Controllers



TMC™ (Front)



TMC (Back)

Description

These controllers are designed for use with stepping motors. Motors sold separately.

1–2 Axis TMC™

The new TMC is a cost-effective motor control solution for up to two motorized axes. It is ideal for applications such as operating a PLD target gearbox on a dual-axis rotary feedthrough, where one axis is used for clocking the targets and the other for continuous rotation of the target.

1–6 Axis TMC

The TMC 3.5 stepping motor controller will drive up to 6 motors with output currents up to 3.5 amps in a single 7 inch high rack mount chassis. It can be operated as a stand alone unit with the standard hand held terminal or with a computer using the RS-232 communications port at rates of up to 57,600 baud.

TMC™ Two-Axis Stepping Motor Controller

The new TMC is a cost-effective motor control solution for up to two motorized axes. It is ideal for applications such as operating a PLD target gearbox on a dual-axis rotary feedthrough, where one axis is used for clocking the targets and the other for continuous rotation of the target.

The control unit includes the power supply, communications interface and access to the digital and analog inputs of the MDI series stepping motors. A control computer with an available COM port is required to run the TMC.

Specifications

- 1 or 2 axes of stepping motor control
- Programmable microstepping rates up to 51,200 steps per revolution
- Programmable holding and run currents
- NV RAM for program and variable storage

- Drive rates to over 3 million pulses per second
- Four digital inputs for each motor
- One analog input for each motor
- Requires computer (RS-232) for control
- RS-232 interface with baud rates up to 115kbps
- 115/230 VAC, 60/50 Hz operation
- Includes all necessary cables (15')
- 5.5" H x 5" W x 8.5" D
- For use with TLI motors only

TMC One- to Six-Axis Stepping Motor Controller

Hositrad provides a powerful yet economical solution for demanding motion control requirements covering a wide range of applications. The TMC 3.5 stepping motor controller will drive up to 6 motors with output currents up to 3.5 amps in a single 7 inch high rack mount chassis. It can be operated as a stand alone unit with the standard hand held terminal or with a computer using the RS-232 communications port at rates of up to 57,600 baud.

With the TMC controller you can be up and running in minutes. Features such as backlash compensation, electronic gearing, closed loop positioning, and homing routines are built in to save you valuable programming time. Outside events can be synchronized using the 12 digital inputs and 14 outputs. Other TMC features include hardware and software emergency shut down functions, hardware and programmable soft end limits and step-to-coordinate conversions. All configurable system and axis parameters can be saved to nonvolatile EEPROM.

Hand Held Terminal

Axis information and control is at your fingertips with the standard hand held terminal. The position and status of each axis is continuously updated on the easy to read 8 line by 24 character screen. A comprehensive set of menus provides access to all of the TMC settings so the controller can be quickly and easily configured.

Features

- 32 bit axis position registers provide over ± 2 billion counts
- Velocity settings to 3 million pulses per second
- Position display in steps, inches, millimeters, centimeters, degrees, radians, or revolutions
- Relative, absolute, continuous, and jogging motions
- Closed loop operation (with optional incremental encoders)
- 4 hardware homing routines (with optional hardware position input)
- Electronic gearing provides multi-axis synchronized motion
- Programmable backlash correction
- Hardware and software emergency stop
- 4 hardware end limits per axis
- Programmable software end limits
- EEPROM stores 10 system parameters and 30 axis parameters

Specifications

- 1 to 6 axes
- Switch selectable output currents from .5 to 3.5 Amperes
- Motor resolutions: 200 and 400, microstepping available
- Full short circuit protection
- Hardware end limit input
- 12 digital input lines
- 14 digital output lines
- RS-232 interface for host computer control
- 7" x 19" x 20" rack mount chassis
- 120/240 VAC 60/50 Hz
- AC Cable (10')
- Motor cabling (12')
- End limit switch cables (25')



Ordering Information

TMC Two-Axis Stepping Motor Controller

Number of Axes	Model No.
1	TMC-1
2	TMC-2

TMC One- to Six-Axis Stepping Motor Controller

Number of Axes	Model No.
1	TMC-3.5-1
2	TMC-3.5-2
3	TMC-3.5-3
4	TMC-3.5-4
5	TMC-3.5-5
6	TMC-3.5-6

Options

Zero Position Input

Model No.: /ZP

- Accepts input from zero position indicator for precise home positioning
- Can be used with Z channel of the quadrature encoder for unique home position

The following two options are available for TMC 3.5 models only:

7 Amp Driver

Model No.: /7

- Replaces the 3.5 amp driver for higher torque requirements

Encoder Input

Model No.: /E

- 1-6 axis input of quadrature encoders
- Accurately updates the internal position register for each axis
- Provides closed loop operation for accurate positioning