

Linear Motion Solutions

Micro Linear Stage | Piezo Nano Stage | Linear Actuator | Controller



MicNano 納微傳動光電有限公司
Micro to Nano MicNano Photronic & Mechatronic Drives Co., Ltd.

Piezo Nanostage



- Long Service Life
- Nanometer resolution
- High positioning accuracy
- Zero backlash
- Comprehensive ASCII command set

MNLS0625PMM-R050



High-resolution micro stage

The high-resolution micro stage integrated with PiezoMotor LL type, linear encoder and cross roller bearings, which has a very compact design and suitable for installation in extremely confined spaces.

Long-Stroke Nanopositioning Stage

The PiezoMotor LEGS patent technology breaks through the limitation of piezoelectric stroke. It helps realize a large travel range and the characteristic of zero backlash. With a high-resolution linear optical encoder and controller with 8192 micro-step, precise closed-loop control can be performed.

MNLS 06 25 PMM- R050



- Long Service Life
- Nanometer resolution
- High positioning accuracy
- Zero backlash
- Comprehensive ASCII command set



Technical Specification		Units
Size	88*88*25	mm
Travel	25	mm
Speed	18	mm/sec
Resolution	50	nm
Straightness	±1	µm
Flatness	±1.5	µm
Accuracy	±1	µm
Repeatability	±0.15	µm
Pitch	100	µrad
Yaw	50	µrad
Holding Force	6	N
Continuous Force	3	N
Motor	LL1811A	
Controller	PMD401	

*Customized specifications in a vacuum environment is available on request.

Motor pin assignment Type: JST06SR-3S

Pin	Color	Terminal
1	Black or Brown	GND
2	Grey	Phase1
3	White	Phase2
4	Green	Phase3
5	Yellow	Phase4

Encoder pin assignment Connector Type: JST 04SR-3S

Pin	Color	Terminal
1	White	Quadrature Index I
2	Black or Brown	GND
3	Red	+5 V (max 200 mA)
4	Blue	Quadrature Signal B-
5	Green	Quadrature Signal A-
6	Grey	NC

RENISHAW Linear Encoder Connector

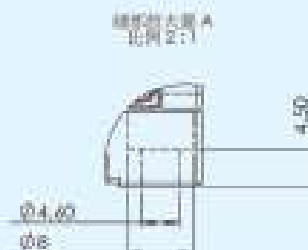
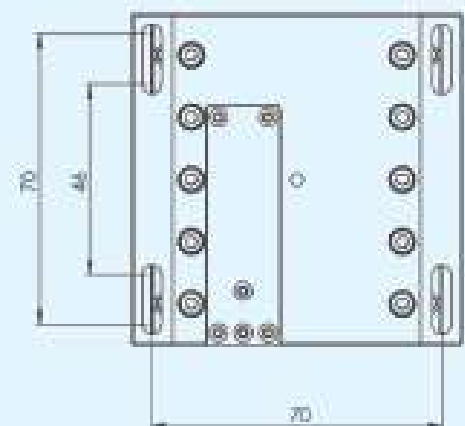
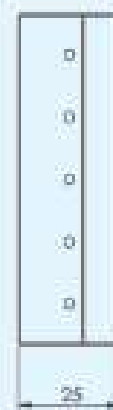
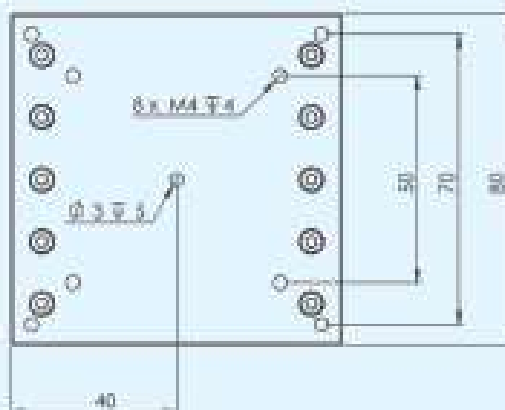
Function	Signal	Colour	15-way D-type (D)
Power	5V	Brown	7.8
	0V	White	2.9
Incremental	A	+	14
		-	6
	B	+	13
		-	5
Reference mark	Z	+	12
		-	4
Alarm	E	-	3
Remote CAL	CAL	Clear	1
Shield	-	Screen	Case

Encoder pin assignment Connector Type: JST 10SR-3S

Pin	Color	Terminal
1	Pink	Quadrature Signal B-
2	Black or Brown	GND
3		NC
4	Blue	Quadrature Signal B-
5	Grey	Quadrature Index I-
6		NC
7	Yellow	Quadrature Signal A-
8	White	Quadrature Index I-
9	Green	Quadrature Signal A-
10	Red	+5 V (max 200 mA)

*Standard cable length for driver PMD401 is 1.0 m. Customized cable length or differential is available on request.

Scale reduced mm



MNLS2040PMM-R050



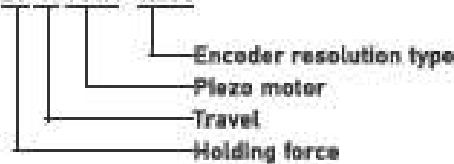
High-resolution micro stage

The high-resolution micro stage integrated with PiezoMotor LT type, linear encoder and cross roller bearings, which has a very compact design and suitable for installation in extremely confined spaces.

Long-Stroke Nanopositioning Stage

The PiezoMotor LEGS patent technology breaks through the limitation of piezoelectric stroke. It helps realize a large travel range and the characteristic of zero backlash. With a high-resolution linear optical encoder and controller with 8192 micro-step, precise closed-loop control can be performed.

MNLS 20 40 PMM- R050



- Long Service Life
- Nanometer resolution
- High positioning accuracy
- Zero backlash
- Comprehensive ASCII command set



Technical Specification		Units
Size	80*100*25	mm
Travel	40	mm
Speed	10	mm/sec
Resolution	50	nm
Straightness	±1	μm
Flatness	±1.5	μm
Accuracy	±2	μm
Repeatability	±0.15	μm
Pitch	150	μrad
Yaw	100	μrad
Holding Force	22	N
Continuous Force	10	N
Motor	LT2020	
Controller	PM0401	

*Customized specifications in a vacuum environment is available on request.

Motor pin assignment Type: JST06SR-3S

Pin	Color	Terminal
1	Black or Brown	GND
2	Grey	Phase1
3	White	Phase2
4	Green	Phase3
5	Yellow	Phase4

Encoder pin assignment Connector Type: JST 06SR-3S

Pin	Color	Terminal
1	White	Quadrature Index I
2	Black or Brown	GND
3	Red	+5 V (max 200 mA)
4	Blue	Quadrature Signal B-
5	Green	Quadrature Signal A+
6	Grey	NC

RENISHAW Linear Encoder Connector

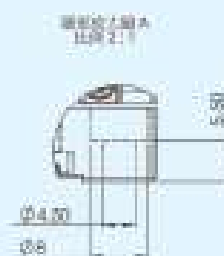
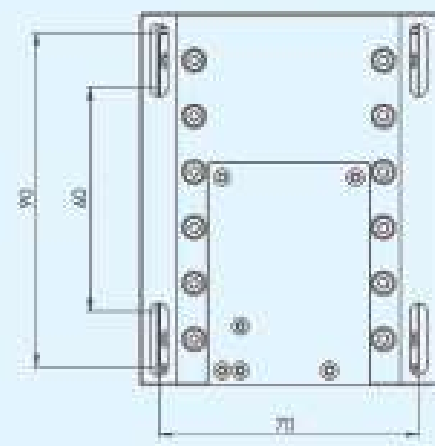
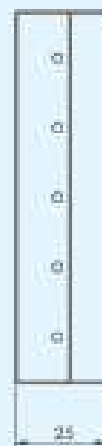
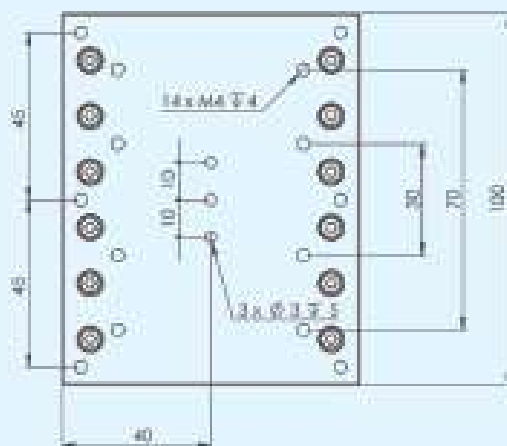
Function	Signal	Colour	15-way D-type (D)	
Power	5V	Brown	7.8	
	0V	White	2.9	
Incremental	A	+	Red	14
		-	Blue	4
	B	+	Yellow	13
		-	Green	5
Reference mark	Z	+	Violet	12
		-	Grey	4
Alarm	E	-	Orange	3
Remote CAL	CAL	Clear	1	
Shield	-	Screen	Case	

Encoder pin assignment Connector Type: JST 10SR-3S

Pin	Color	Terminal
1	Pink	Quadrature Signal B-
2	Black or Brown	GND
3		NC
4	Blue	Quadrature Signal B+
5	Grey	Quadrature Index I-
6		NC
7	Yellow	Quadrature Signal A-
8	White	Quadrature Index I+
9	Green	Quadrature Signal A+
10	Red	+5 V (max 200 mA)

*Standard cable length for driver PMD401 is 1.0 m. Customized cable length or differential is available on request.

Scale reduced mm

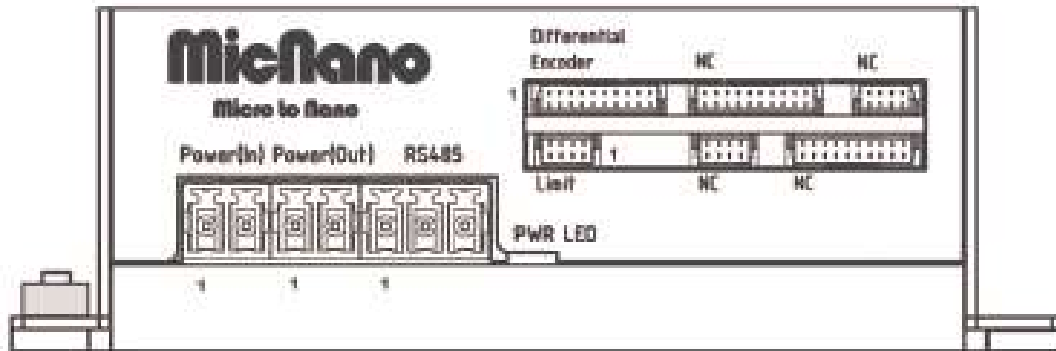


Piezo LEGS[®] Controller



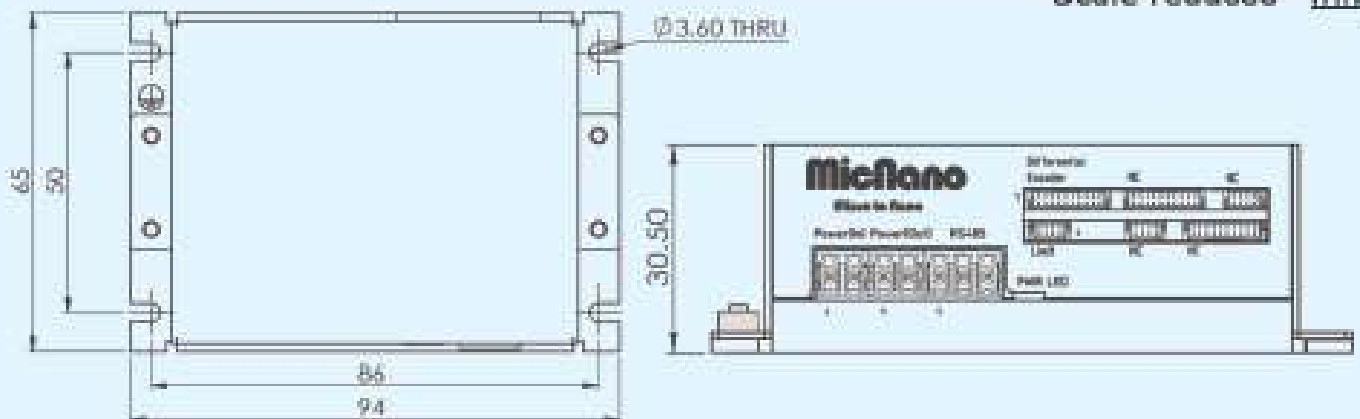
- Nanometer resolution
- Closed loop control
- Open loop mode
- Small form factor

1-axis Piezo LEGS® Controller PMD401

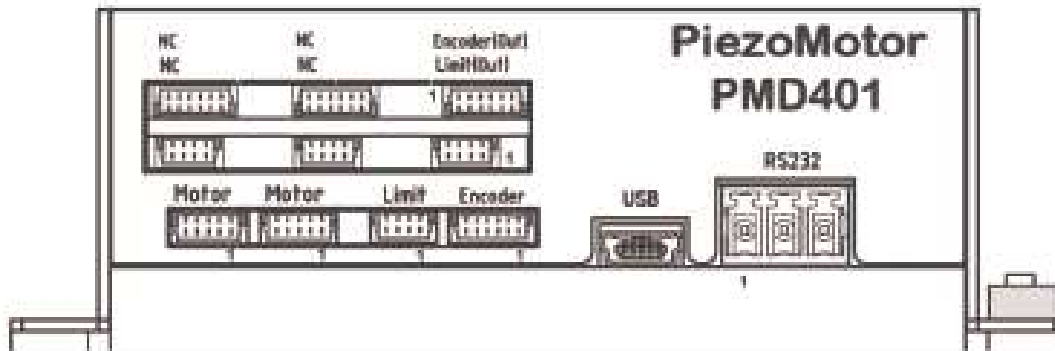


Connector	Pin	Function	I/O	Note
Power (in)	1	+VCC(24VDC)	In	Recommended mating connector DINKLE EC350V-02P
	2	GND	Power GND	
Power (out)	1	+VCC(24VDC)	In	The two power connectors are connected in parallel Recommended mating connector DINKLE EC350V-03P
	2	GND	Power GND	
RS485	1	DATA+	In/Out	Recommended mating connector DINKLE EC350V-03P
	2	DATA-	In/Out	
	3	GND	In	
Differential encoder	1	B-	In	Recommended mating connector JST 18SR-3S
	2	GND	GND	
	3	NC		
	4	B+	In	
	5	I-	In	
	6	NC		
	7	A-	In	
	8	I+	In	
Limit	9	A+	In	Recommended mating connector JST 18SR-3S
	10	5V Out	Out	
	1	GND	GND	
	2	5V Out	Out	
	3	Limit Reverse	In	
	4	Limit Forward	In	

Scale reduced mm



1-axis Piezo LEGS® Controller PMD401



Connector	Pin	Function	I/O	Note
RS232	1	TxD	Out	Recommended mating connector DMKLE EC358Y-43P
	2	RxD	In	
	3	GND	GND	
Mini-USB				Any standard mini-USB plug
Encoder	1	I-	In	Recommended mating connector JST B4SR-3S
	2	GND	GND	
	3	5V Out	Out	
	4	B+	In	
	5	A+	In	
	6	NC		
Limit	1	GND	GND	Recommended mating connector JST B4SR-3S
	2	5V Out	Out	
	3	Limit Reverse	In	
	4	Limit Forward	In	
Motor	1	GND	GND	The two motor connectors are connected in parallel. Recommended mating connector JST B4SR-3S
	2	Motor Phase 1	Out	
	3	Motor Phase 2	Out	
	4	Motor Phase 3	Out	
	5	Motor Phase 4	Out	
Encoder (Du0)	1	I-	Out	Recommended mating connector JST B4SR-3S
	2	GND	GND	
	3	5V Out	Out	
	4	B+	Out	
	5	A+	Out	
	6	NC		
Limit (Du0)	1	GND	GND	Recommended mating connector JST B4SR-3S
	2	5V Out	Out	
	3	Limit Reverse	Out	
	4	Limit Forward	Out	

MicNano

Micro to Nano

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