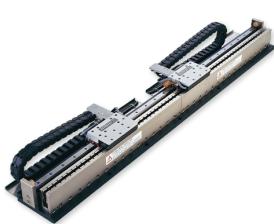


# Positioning Measurement System

Technical Information

TAIWAN EXCELLENCE  
GOLD AWARD 2005**Ballscrew**

- For Heavy-Load Drive

TAIWAN EXCELLENCE  
2004  
**Positioning Guideway**TAIWAN EXCELLENCE  
GOLD AWARD 2004**Linear Synchronous Motor**

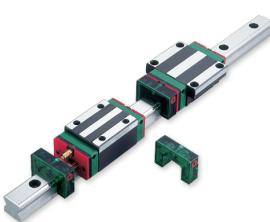
- Coreless Type (LMC)
- Iron-core Type (LMS)

TAIWAN EXCELLENCE  
2002  
**Linear Actuator**

- LAN for Hospital
- LAM for Industrial
- LAS Compact Size
- LAK Controller

TAIWAN EXCELLENCE  
GOLD AWARD 2003**Single Axis Robot**

- For Semiconductor & Electronic (KK Robot)
- For Automation (KS, KA Robot)

TAIWAN EXCELLENCE  
SILVER AWARD 2009  
**Linear Motor Air Bearing Platform**TAIWAN EXCELLENCE  
GOLD AWARD 2008TAIWAN EXCELLENCE  
SILVER AWARD 2007, 2002**Linear Guideway**

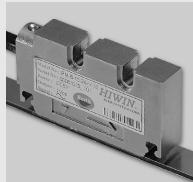
- HG/EG/RG/MG Type
- Self-Lubricating (E2)
  - Low Noise (Q1)
  - Air Jet (A1)

**Positioning  
Measurement System**TAIWAN EXCELLENCE  
GOLD AWARD 2009, 2008TAIWAN EXCELLENCE  
SILVER AWARD 2006, 2001, 1993**Ballscrews**

Ground/Rolled

- High Speed (High Dm-N Value/Super S Series)
- Heavy Load (Cool type II)
- Self-Lubricating (E2)
- Rotating Nut (R1)

**Linear Motor X-Y Robot**TAIWAN EXCELLENCE  
SILVER AWARD 2006**TMS Direct-Driven  
Positioning System****Linear Motor Gantry**



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## The Component Breakdown of the Positioning Measurement System

1mm Placement Figure (Analog)

Pole Pitch	Refer Page	Resolution	Encoder Type	Refer Page	Signal	Type of Connector	Refer Page
1mm PS-B-□□□□□	Page 1	1μm	T Type PM-B-□□-□A-T-□□	Page 2		No connector 	
			Standard Type PM-B-□□-□A-S-□□	Page 4		D-sub VGA 15 Pin 	
			Vertical Type PM-B-□□-□A-V-□□	Page 6	Analog	D-sub 15 Pin 	
			PG Type PM-B-□□-□A-G-□□-□	Page 8		17 Pin Circuit Plug 	Page 12
						SCSI 14 Pin 	
						SCSI 14 Pin (with screw) 	
						SCSI 20 Pin 	

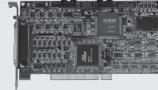
1mm Placement Figure (Analog)

Translator	Refer Page	Trunk Connector	Refer Page	Counter/Display Application	Refer Page
				High Efficiency Single Axis Counter PMED-H1-1-B□-□	Page 29
ST-B-□□	Page 10	D-sub 9 Pin to D-sub VGA 15 Pin STC-□□-00-□	Page 36	High Efficiency Multi-axis Counter PMED-S4-□	Page 34
				Multi-axis Counter PMED-S3-□	Page 32
		D-sub 9 Pin to D-sub 15 Pin STC-□□-01-□		For M Company 3 Axis Counter	
		Copley Driver No.800-1519A/1513A		PLC or Driver	
				Linear Motors (HIWIN LM)	

1mm Placement Figure (Digital)

Pole Pitch	Refer Page	Resolution	Encoder Type	Refer Page	Signal	Type of Connector	Refer Page
1mm PS-B-□□□□□	Page 1	1μm	T Type PM-B-□□-□D-T-□□	Page 2		Non Connector	
			Standard Type PM-B-□□-□D-S-□□	Page 4	Digital	D-sub VGA 15 Pin	
			PG Type PM-B-□□-□D-G-□□-□	Page 8		D-sub 15 Pin	
						17-Pin Circular Plug	Page 12
						SCSI 14 Pin	
						SCSI 14 Pin (with screw)	
						SCSI 20 Pin	

1mm Placement Figure (Digital)

	Counter/Display Application	Refer Page
		
		Page 29
		Page 34
		Page 32
Copley Driver No.800-1519A/1513A		
		

5mm Placement Figure (Analog)

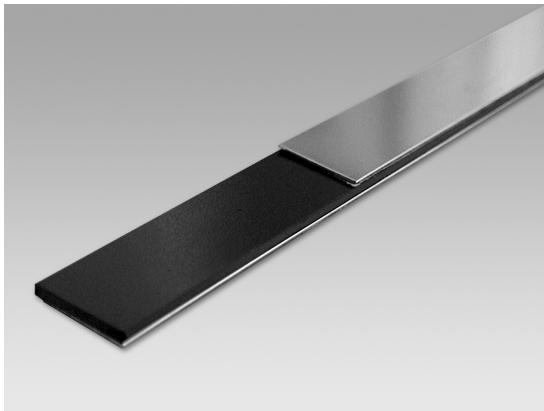
Pole Pitch	Refer Page	Resolution	Encoder Type	Refer Page	Signal	Type of Connector	Refer Page
5mm PS-A-□□□□□	Page 16	5μm	E Type PM-A-□□-□A-E-00 	Page 19		D-sub VGA 15 Pin 	Page 12
			H Type PM-A-□□-□A-H-□□ 	Page 21	Analog	SCSI 14 Pin  SCSI 14 Pin (with screw) 	Page 12
			Vertical Type PM-A-□□-□A-V-□□ 	Page 17		D-sub VGA 15 Pin 	

5mm Placement Figure (Analog)

Translator	Refer Page	Trunk Connector	Refer Page	Counter/Display Application	Refer Page
				High Efficiency Single Axis Counter PMED-H1-1-A□-□	Page 29
ST-A-□□	Page 22	D-sub 9 Pin to D-sub VGA 15 Pin STC-□□-00-□	Page 36	LED Counter System PMCD-A-1-00	Page 27
ST-A-□□B		D-sub 9 Pin to D-sub 15 Pin STC-□□-01-□		High Efficiency Multi-axis Counter PMED-S4-□	Page 34
				Multi-axis Counter PMED-S3-□	Page 32
				For M Company 3 Axis Counter	
				PLC or Driver	
				High Efficiency Single Axis Counter PMED-H1-1-A□-□	Page 29
				LCD Counter System PMLD-A-□□-□-□	Page 25

# I. 1mm High Resolution Position Measurement System

## 1. 1mm Positioning Scale



### Features:

- Compatible with various measurement instruments to achieve different accuracy requirements.
- Magnetic scale can maintain performance under severe ambient conditions caused by oil, water or dust to gain required accuracy and signal feedback.

### 1.1 Specifications:

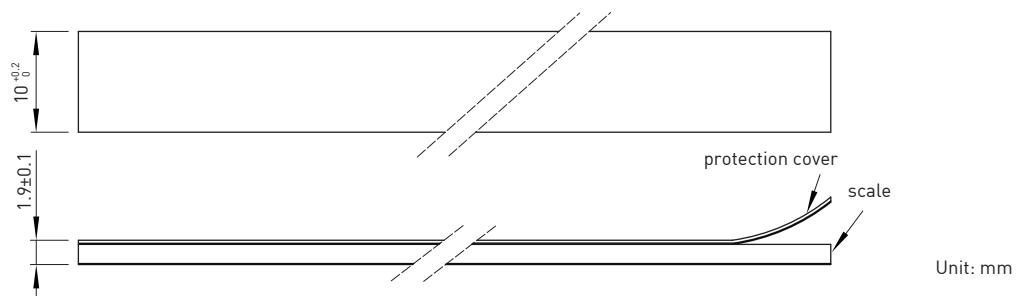
Accuracy	$\pm 20\mu\text{m}/\text{m}$
Pitch	1mm
Width	10mm (+0.2mm~0mm)
Thickness	$1.9\text{mm}\pm 0.1\text{mm}$
Max scale length	30m
Linear expansion coefficient	$(11\pm 1)\times 10^{-6}\text{m/K}$
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP67

### 1.2 Ordering Code:

PS - B - XXXXX

PS: Positioning Scale  
XXXXX: Scale length (Unit: mm)  
B: Pole pitch (1mm)

### 1.3 Dimensions:



**Caution!** Magnetic scale consists of a magnetic substance and should be kept away from strong magnetic fields during installation to prevent a malfunction.

## 2. Positioning Measurement - Tiny Type



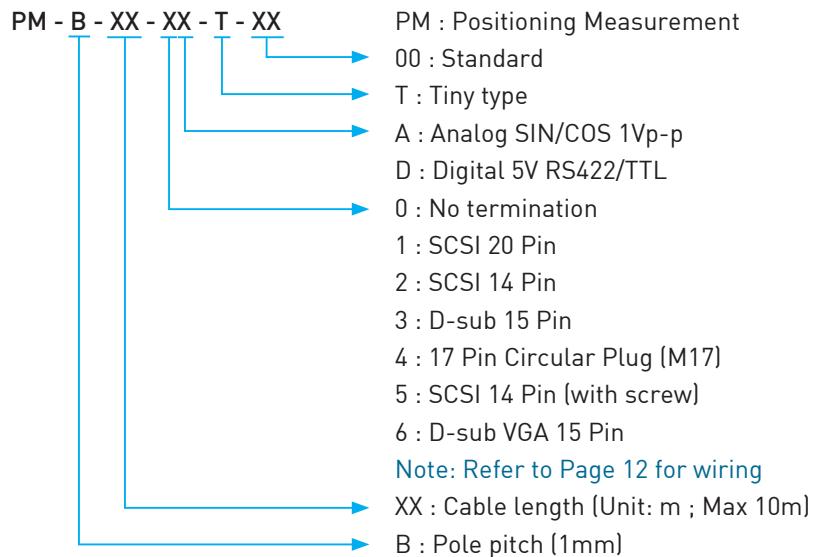
### Features:

- Tiny shape
- Digital or analog output available
- Simple design and easy-mounting
- Same installation holes as other optical encoders, easy to switch and replace

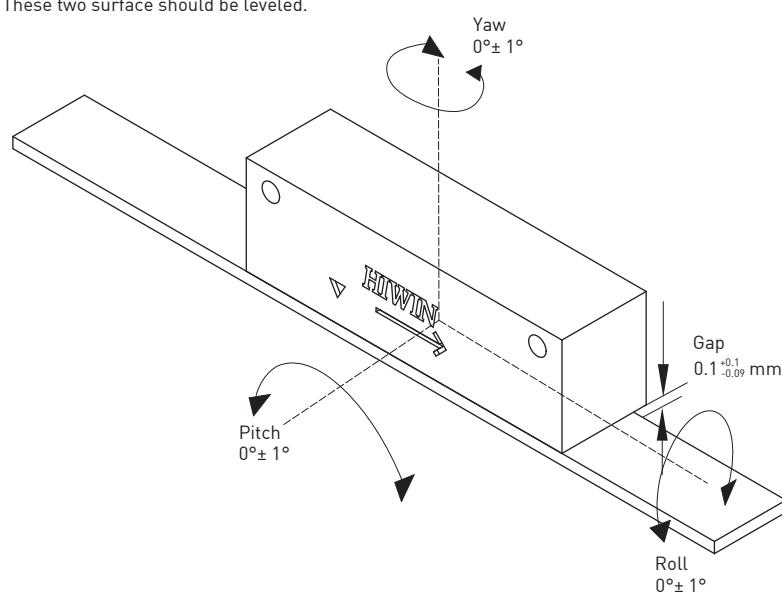
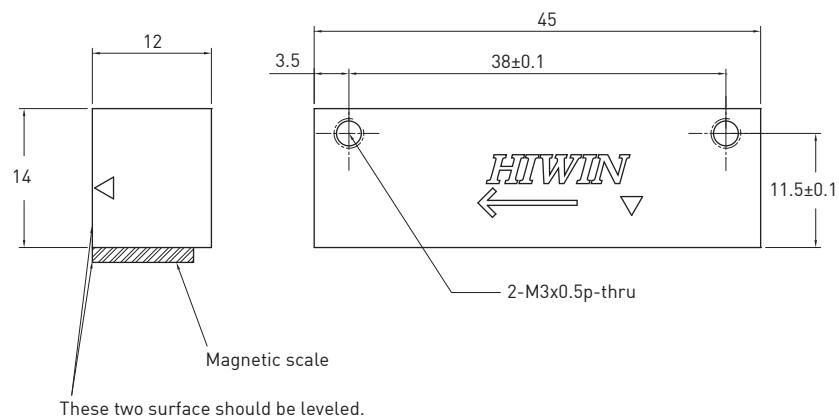
### 2.1 Specifications:

Signal resolution	analog: 1mm digital: 1μm
Repeatability	analog: ±3μm digital: ±2μm
Reference signal	1mm/pulse
Output signal	analog: SIN/COS 1Vp-p digital: 5V RS422/TTL
Max travel speed	analog: 10m/sec digital: 7m/sec
Input power	5VDC ±5%
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP67

## 2.2 Ordering Code:



## 2.3 Dimensions:



### 3. Positioning Measurement - Standard Type



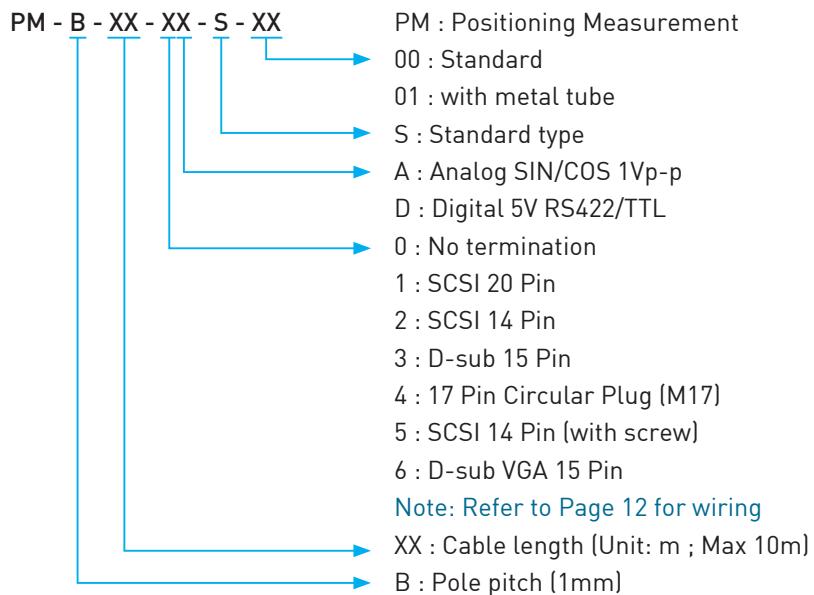
#### Features:

- Digital or analog signal output available
- Simple design and easy-mounting
- Same installation holes as other optical encoders, easy to switch and replace
- Waterproof and dustproof
- Optional metal protection tube

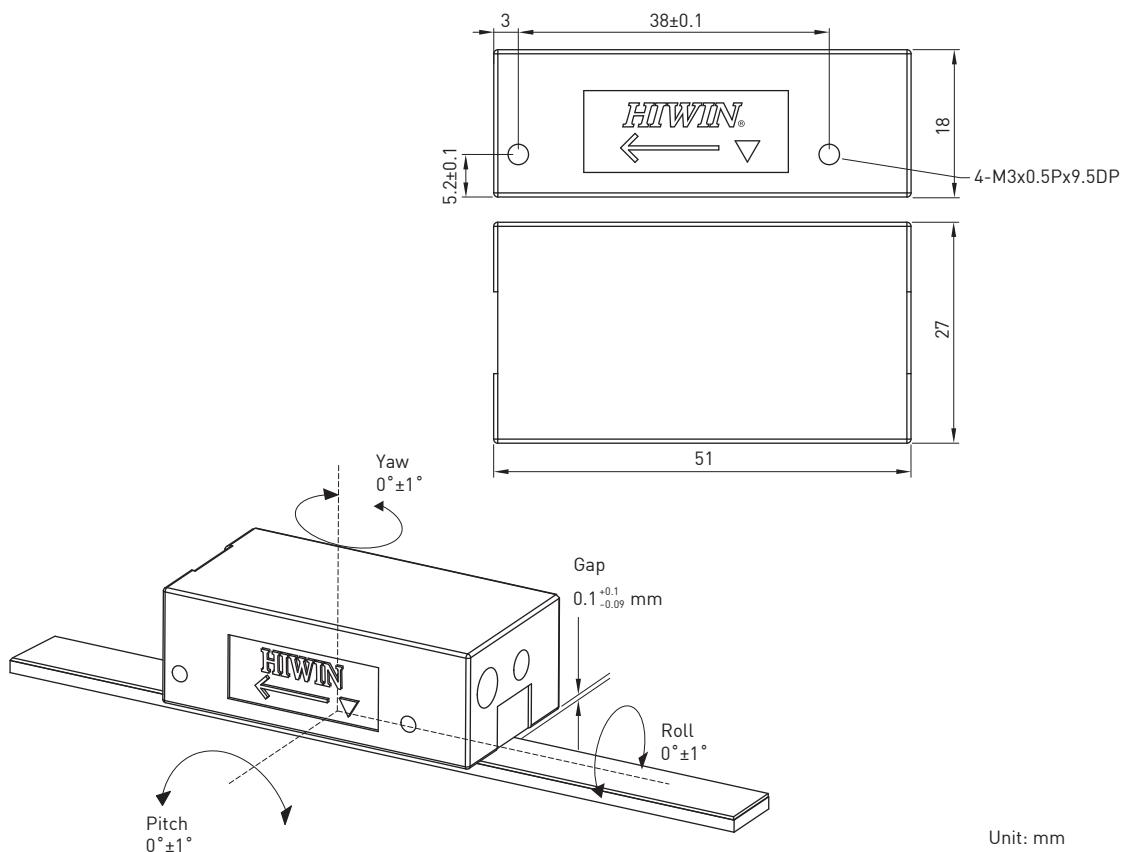
#### 3.1 Specifications:

Signal resolution	analog: 1mm digital: 1µm
Repeatability	analog: ±3µm digital: ±2µm
Reference signal	1mm/pulse
Output signal	analog: SIN/COS 1Vp-p digital: 5V RS422/TTL
Max travel speed	analog: 10m/sec digital: 7m/sec
Input power	5VDC ±5%
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP67

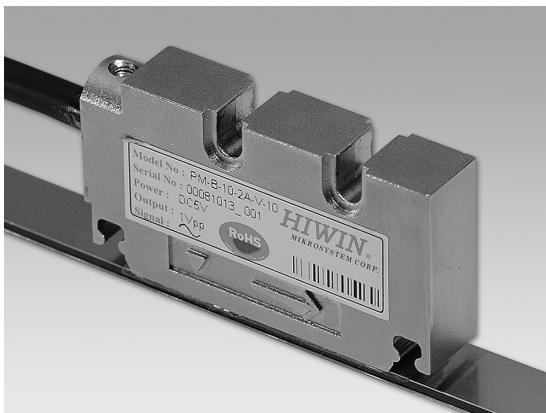
### 3.2 Ordering Code:



### 3.3 Dimensions:



## 4. Positioning Measurement - Vertical Type



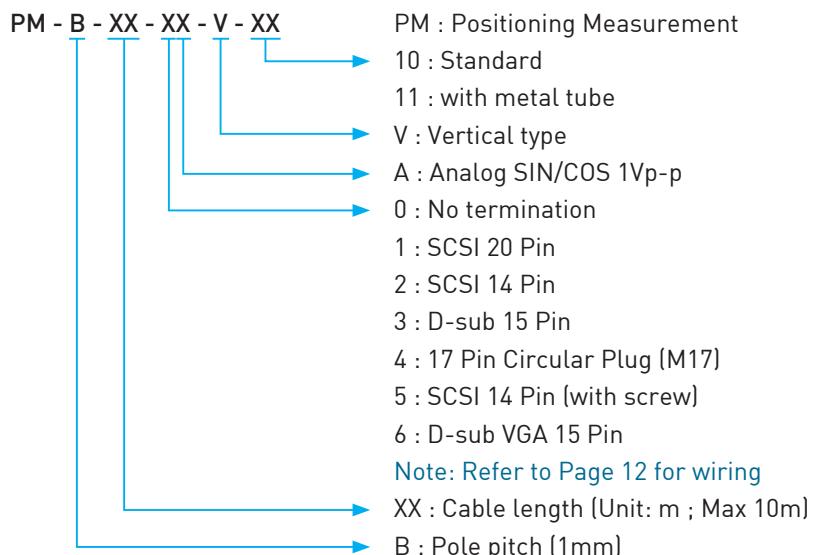
### Features:

- Analog signal output available
- Vertical shape, optimal for space-saving applications
- Optional metal protection tube

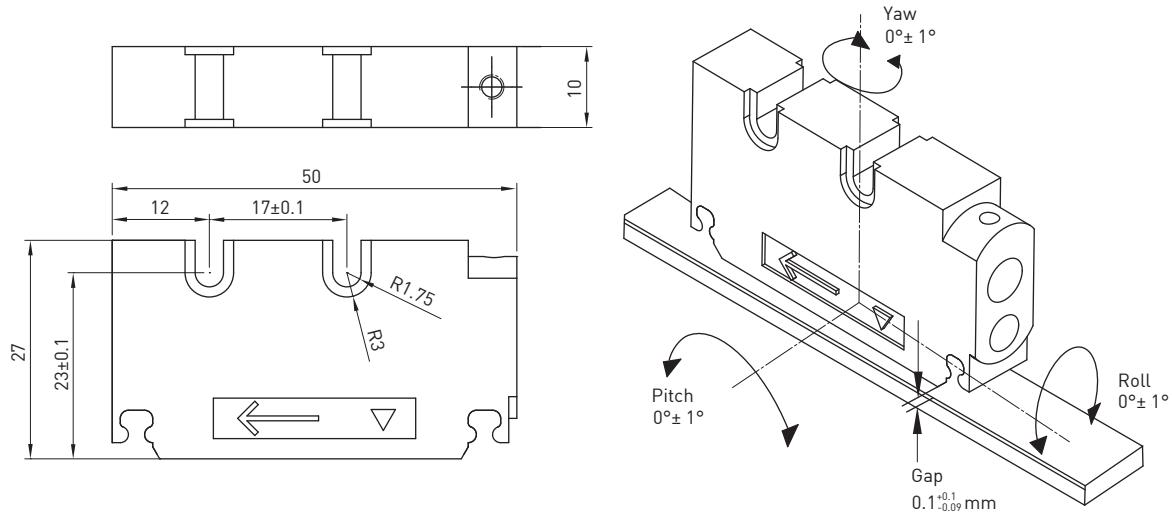
### 4.1 Specifications:

Signal resolution	analog: 1mm
Repeatability	$\pm 3\mu\text{m}$
Reference signal	2mm/pulse
Output signal	analog: SIN/COS 1Vp-p
Max travel speed	analog: 10m/sec
Input power	5VDC $\pm 5\%$
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP67

### 4.2 Ordering Code:

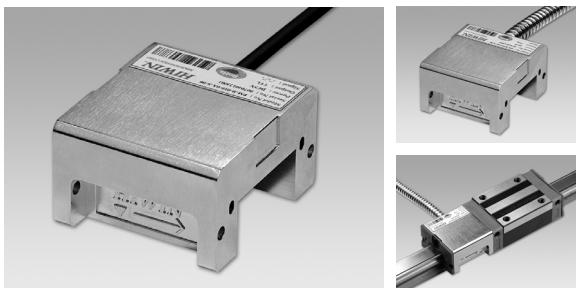


#### 4.3 Dimensions:



Unit: mm

## 5. Positioning Measurement - PG Type



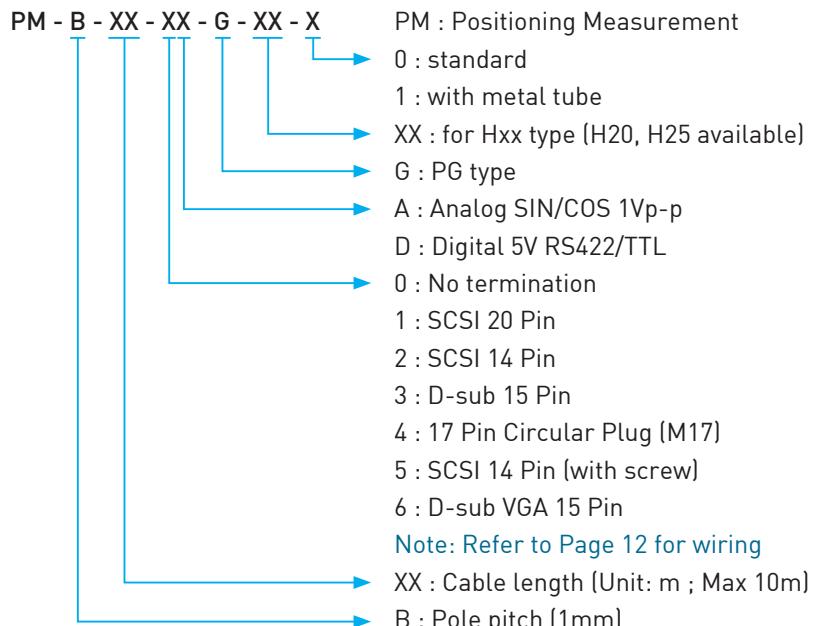
### Features:

- Digital or analog signal output available
- Compact design and compatible with HIWIN linear guideways
- Cost-effective and reliable
- Optimal solution for automation equipment that requires precise position feedback

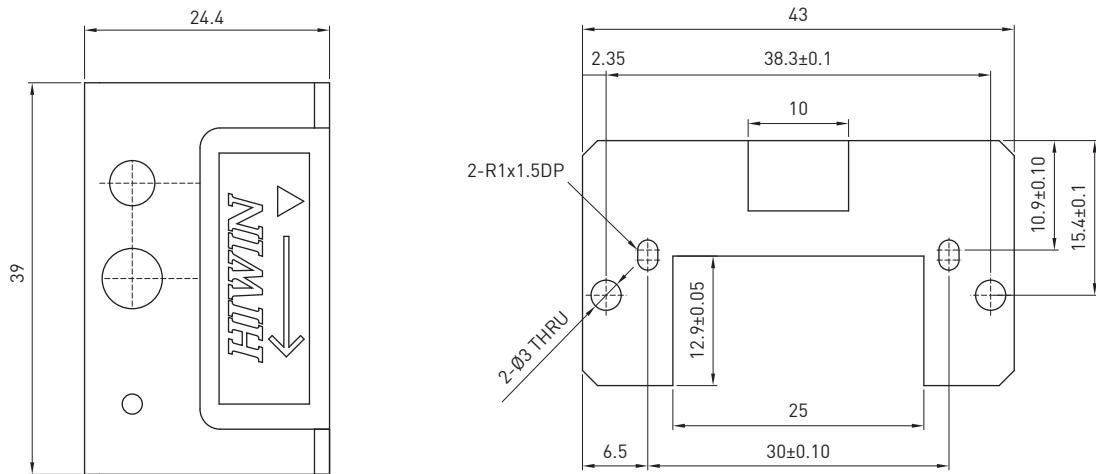
### 5.1 Specifications:

Signal resolution	analog: 1mm digital: 1µm
Repeatability	analog: ±3µm digital: ±2µm
Reference signal	1mm/pulse
Output signal	analog: SIN/COS 1Vp-p digital: 5V RS422/TTL
Max travel speed	analog: 10m/sec digital: 7m/sec
Input power	5VDC ±5%
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP67

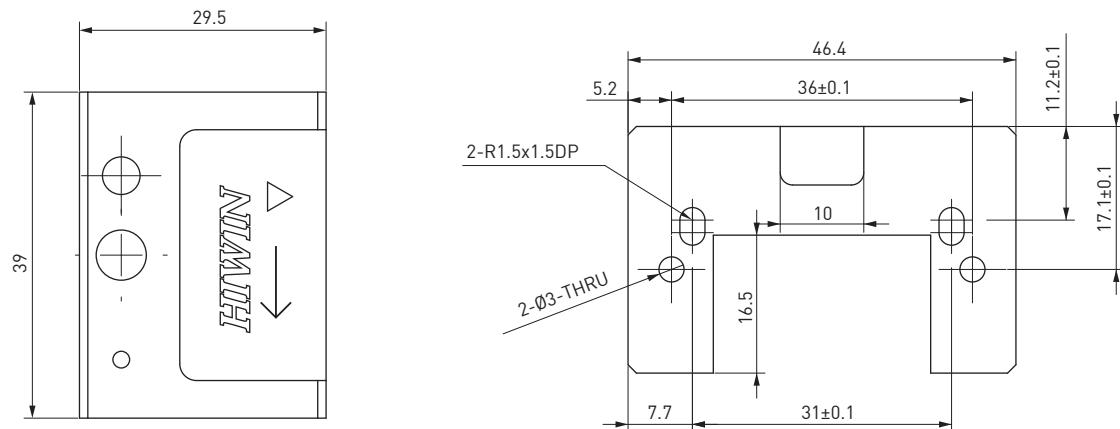
### 5.2 Ordering Code:



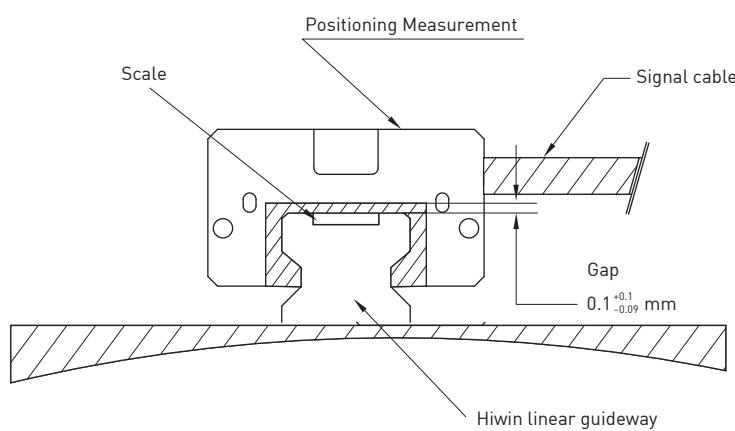
### 5.3 Dimensions:



Note: These dimensions are applicable for the Hiwin PGH20 linear guideway



Note: These dimensions are applicable for the Hiwin PGH25 linear guideway



Unit: mm

## 6. 1mm Signal Translator



### Features:

- Converting an analog signal input into a digital signal output
- Output signal 5V RS422/TTL or open collector
- Suitable for precise position feedback to a PC or PLC connection

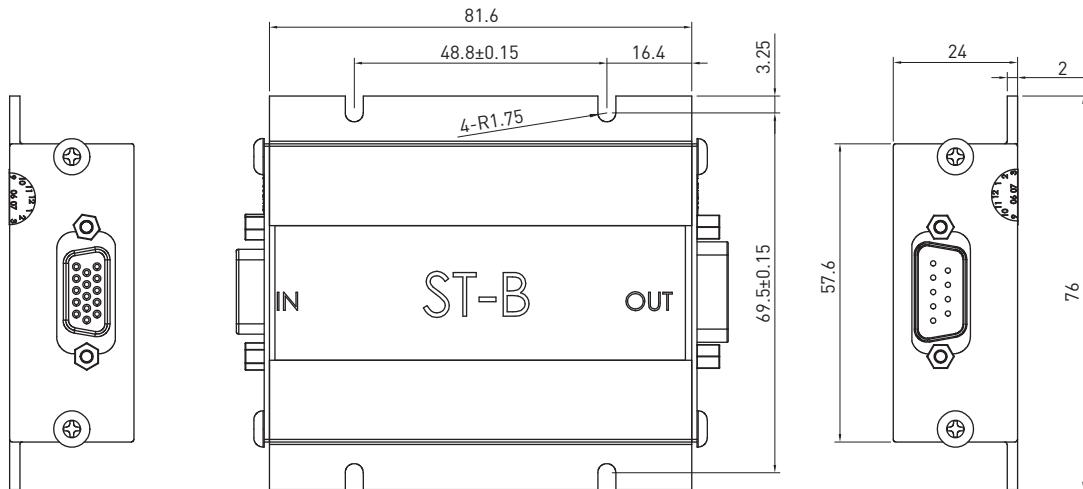
### 6.1 Specifications:

Repeatability	$\pm 3\mu m$
Resolution	1 $\mu m$ , 2 $\mu m$ , 5 $\mu m$ , 10 $\mu m$
Input signal	analog: Sin/Cos 1Vp-p
Output signal	digital: 5V RS422/TTL or 24V/Open collector
Max output frequency	1.25MHz (Resolution: 1 $\mu m$ mode)
Power input	5VDC $\pm 5\%$ /0.5A
Max travel speed	5m/sec
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP43

### 6.2 Ordering Code:



### 6.3 Dimensions:



Unit: mm

## 7. Cable Color and Pin Assignment

Function	Signal		Color	Connector (SCSI 14 Pin) Analog	Connector (SCSI 20 Pin)		Connector (D-sub 15 Pin)		Connector (17 Pin Circular Plug)	Connector (D-sub VGA 15 Pin)		No Termination
	Analog	Digital			Analog	Digital	Analog	Digital		Analog	Digital	
Power	5V		Brown	1	3	3	4	7	4/5	1	1	Brown
	0V		White	8	2	2	12	2	12/13	2	2	White
Incremental signals	SIN+	A+	Green	10	16	4	9	14	9	11	3	Green
	SIN-	A-	Yellow	11	17	5	1	6	1	12	9	Yellow
	COS+	B+	Blue	3	18	6	10	13	10	13	4	Blue
	COS-	B-	Red	4	19	7	2	5	2	14	10	Red
Reference mark	REF+	Z+	Violet	5	8	8	3	12	3	7	7	Violet
	REF-	Z-	Gray	6	9	9	11	4	11	8	8	Gray
Shield				case	1/case		case		case	case		

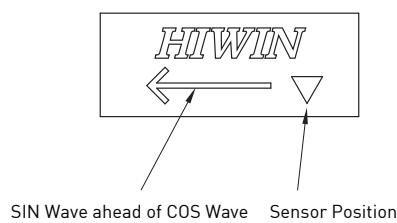
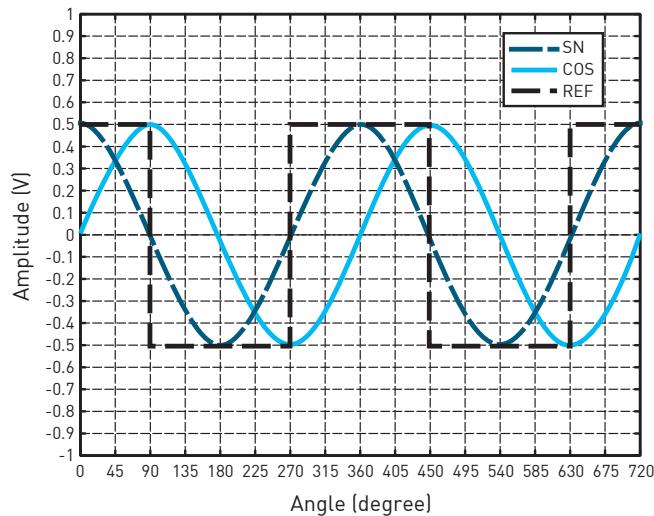
Note: 17 pin circular plug

Brand: Intercontec Corp.

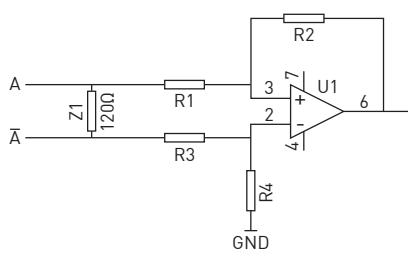
P/N: AKUA874MR1087004A000

## 8. Output Signal Definition

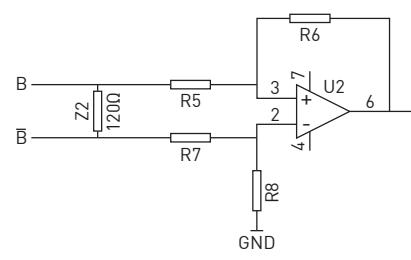
### 8.1 Analog Signal Definition:



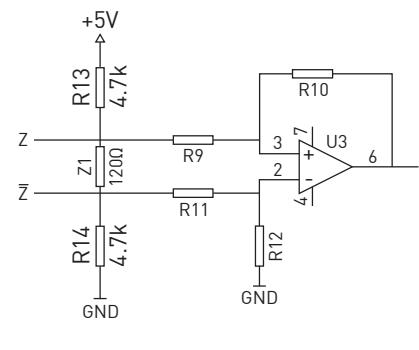
Recommended input circuit of the following electronic device:



A-channel



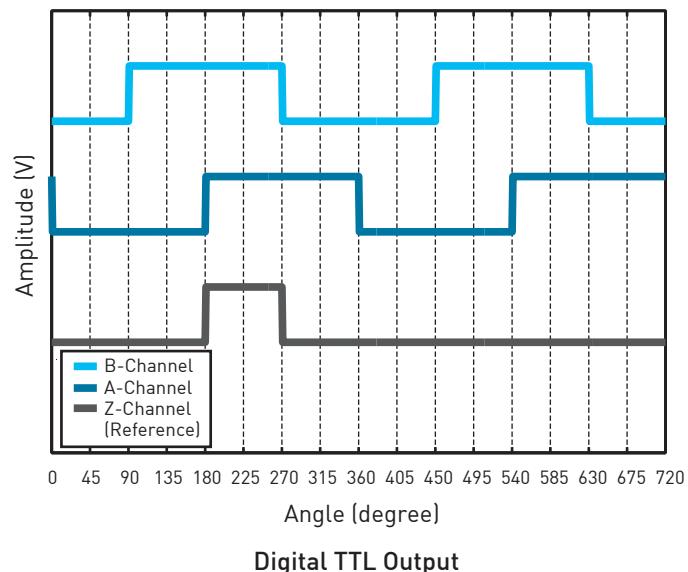
B-channel



Reference-channel

Analog Output

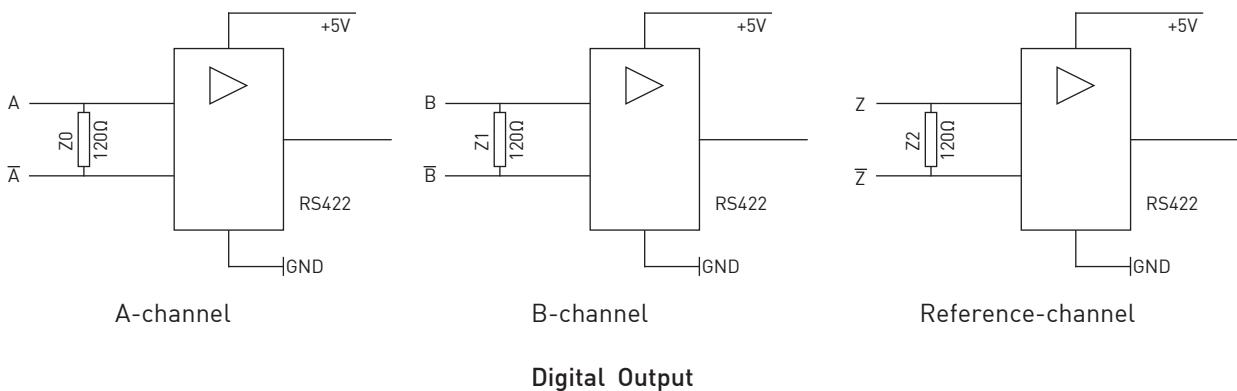
## 8.2 Digital Signal Definition:



Digital TTL output according to RS422:

- 90° Phase shifted square signal in compliance with RS422 specification
- Recommended termination  $Z=120\text{ Ohm}$
- Differential output signal  $A, \bar{A}, B, \bar{B}, Z, \bar{Z}$

Recommended input circuit of the following electronic device:

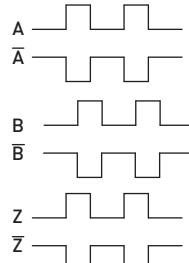


## 9. Signal Translator Pin Assignment

### **Output Signal and Application:**

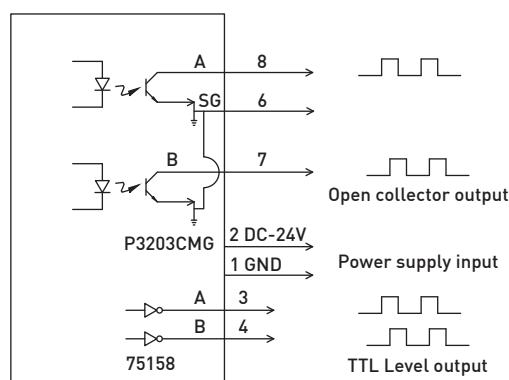
## ST-B-□1: D-sub 9 pin definition for signal output connector

Pin No.	Signal	I/O
1	GND	I
2	DC5V	I
3	A	0
8	$\bar{A}$	0
4	B	0
7	$\bar{B}$	0
5	Z	0
9	$\bar{Z}$	0
6	SGND	I



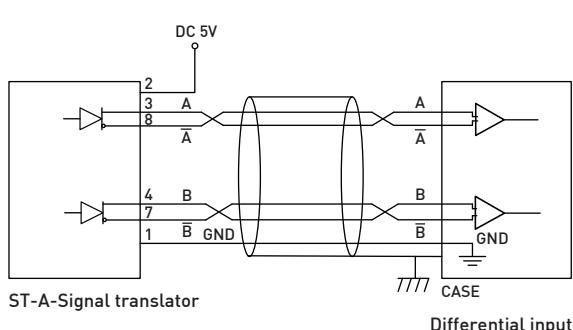
ST-B-□2: D-sub 9 pin definition for signal output connector

Pin No.	Signal	I/O
1	GND	I
2	DC24V	I
8	A (open collector)	0
7	B (open collector)	0
3	A (TTL level)	0
4	B (TTL level)	0
5	Z	0
9	$\bar{Z}$	0
6	SGND	I

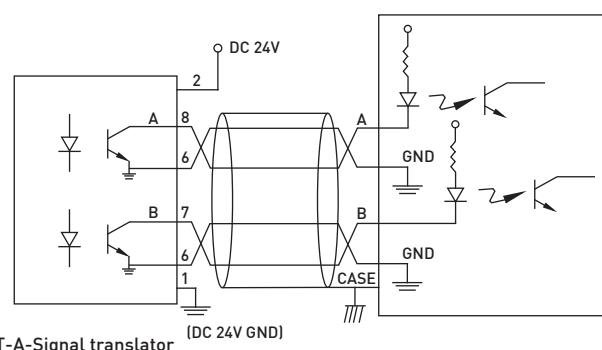


## Application Example:

#### ST-B-□1(5V RS422/TTL) Wiring

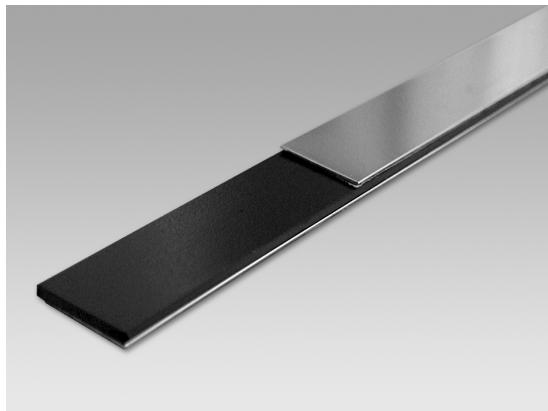


ST-B-□2(24V/O.C.) Wiring



## II. 5mm High Resolution Position Measurement System

### 10. 5mm Positioning Scale



#### Features:

- Compatible with various measurement instruments to achieve different accuracy requirements.
- Magnetic scale can maintain performance under severe ambient conditions caused by oil, water or dust to gain required accuracy and signal feedback.

#### 10.1 Specifications:

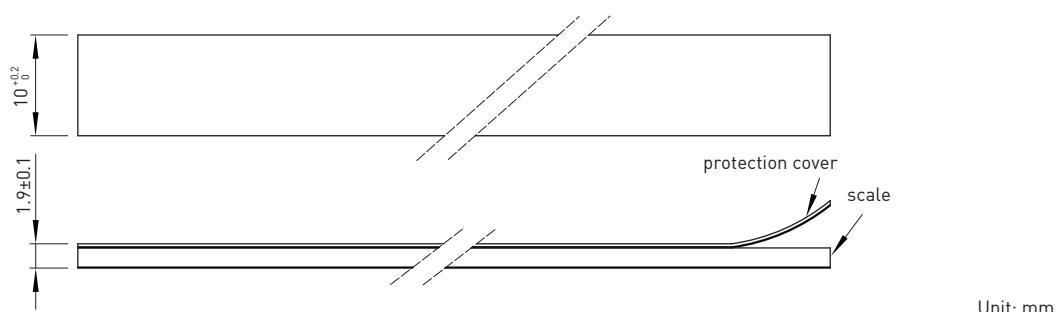
Accuracy	$\pm (80\mu\text{m}+15\mu\text{m}/\text{m}\times L)$ L: Length (unit: m)
Pitch	5mm
Width	10mm (+0.2mm~0mm)
Thickness	1.9mm±0.1mm
Max scale length	30m
Linear expansion coefficient	(11±1) $\times 10^{-6}$ m/K
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP67

#### 10.2 Ordering Code:

PS - A - XXXXX

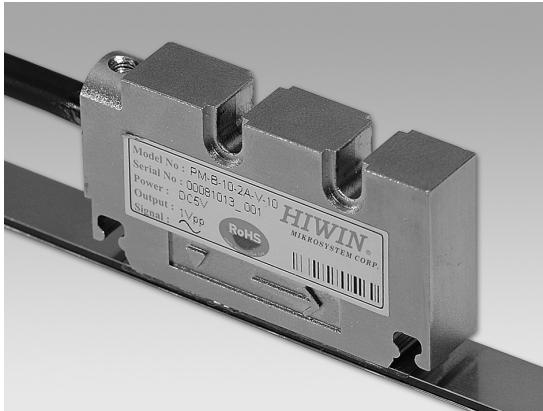
PS : Positioning Scale  
XXXXX : Scale length (Unit: mm)  
A : Pole pitch (5mm)

#### 10.3 Dimensions:



**Caution!** Magnetic scale consists of a magnetic substance and should be kept away from strong magnetic fields during installation to prevent a malfunction.

## 11. Positioning Measurement - Vertical Type



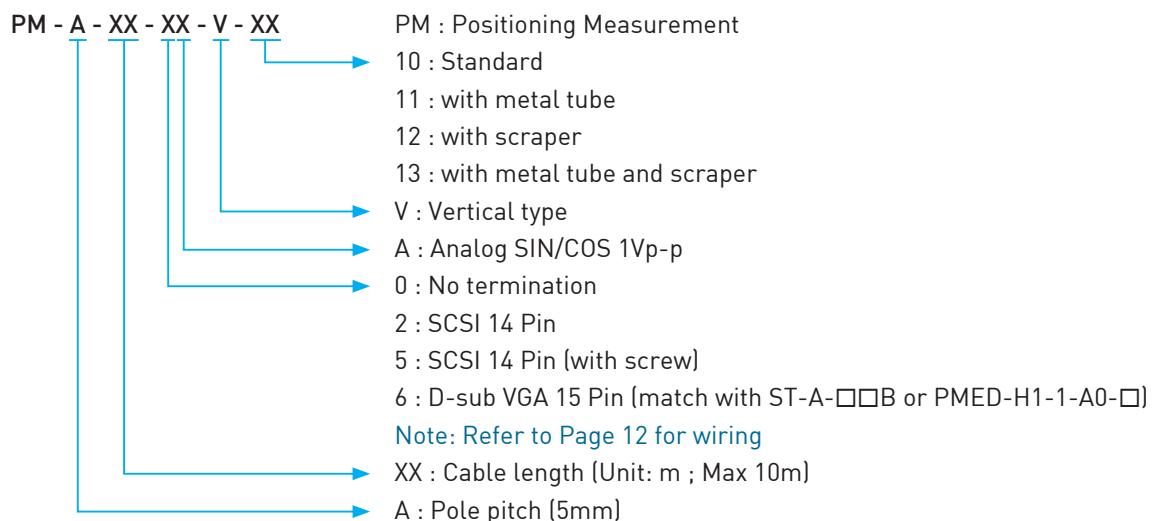
### Features:

- Analog signal output
- Vertical shape, optimal for space-saving applications
- Optional metal protection tube and scraper available

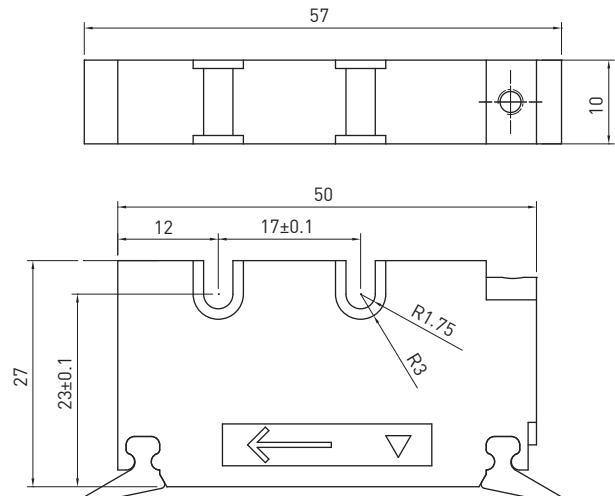
### 11.1 Specifications:

Signal resolution	analog: 5mm
Repeatability	$\pm 10\mu\text{m}$
Output signal	analog: SIN/COS 1Vp-p
Max travel speed	analog: 10m/sec
Input power	5VDC $\pm 5\%$
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP67

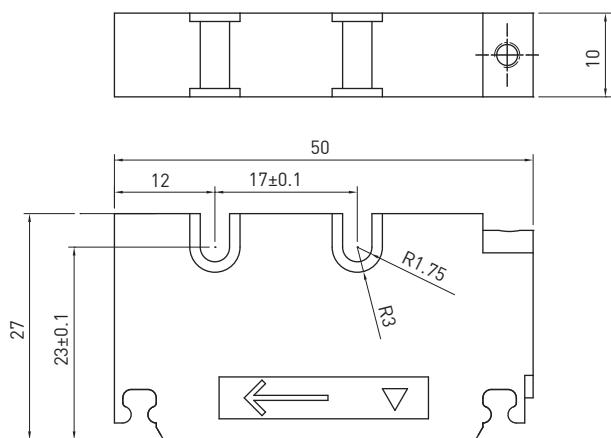
### 11.2 Ordering code:



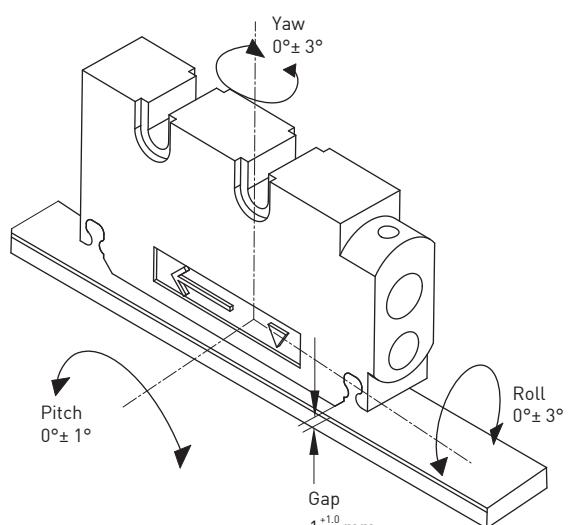
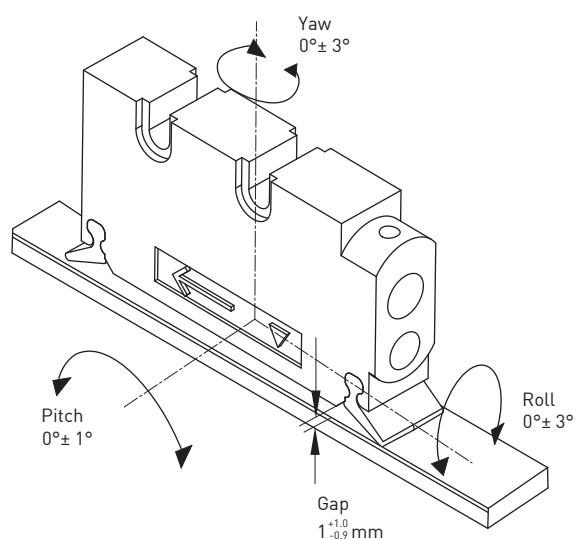
### 11.3 Dimensions:



Read head with scraper



Standard read head



Unit: mm

## 12. Positioning Measurement - E Type



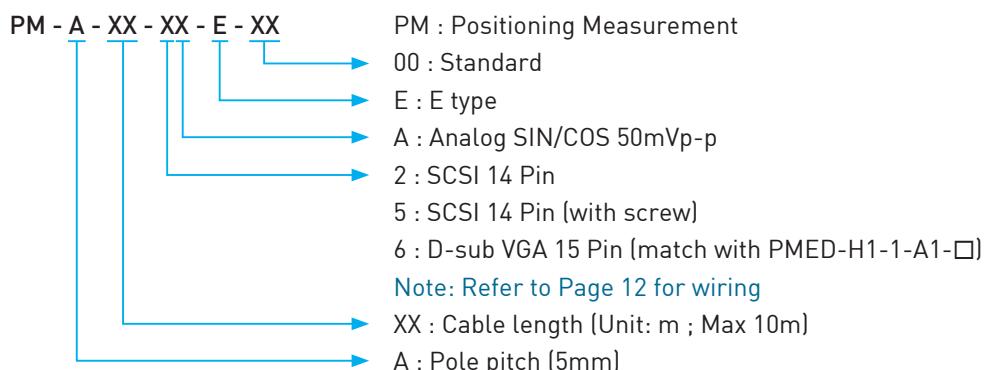
### Features:

- Analog signal output
- Optimal for space-saving applications
- Dustproof and waterproof, up to IP67 protection class

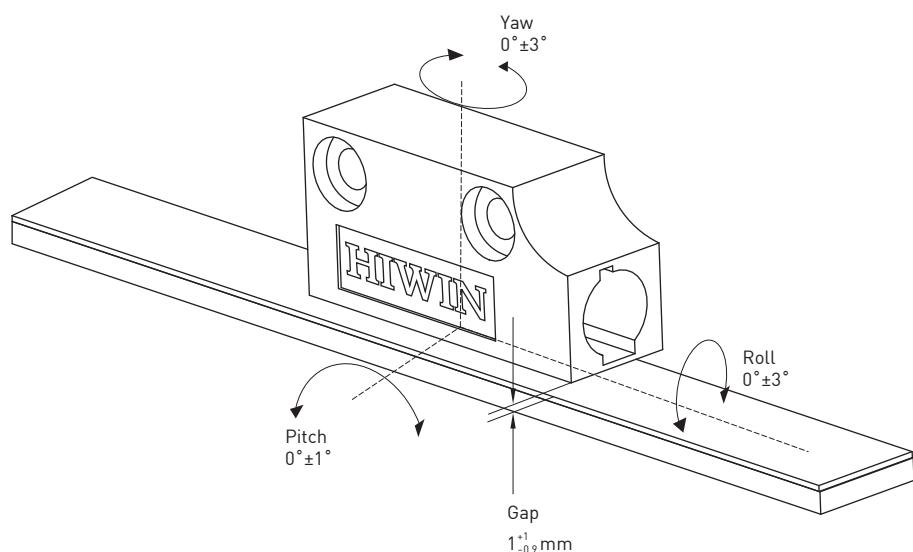
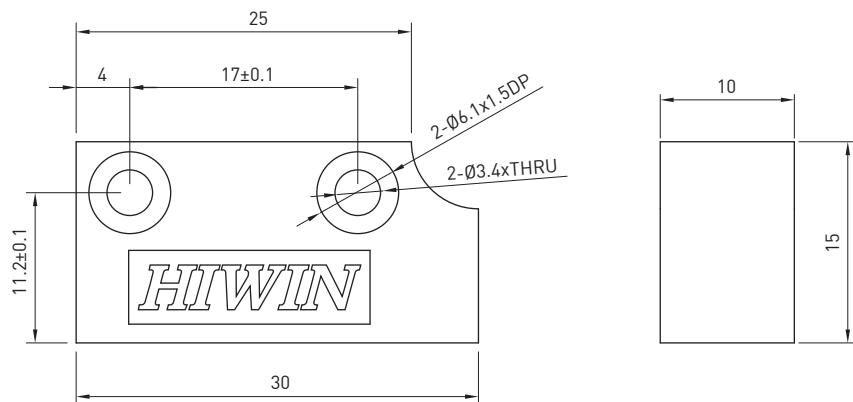
### 12.1 Specifications:

Signal resolution	5mm
Repeatability	$\pm 20\mu\text{m}$
Output signal	analog: SIN/COS 50mVp-p
Max travel speed	10m/sec
Input power	3.3VDC ±5%
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP67

### 12.2 Ordering Code:



## 12.3 Dimensions:



Unit: mm

## 13. Positioning Measurement - H Type



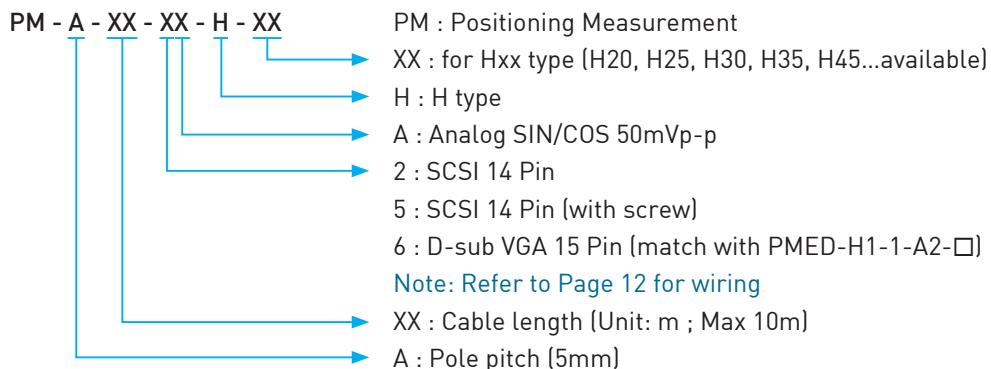
### Features:

- Analog signal output
- Compact design used with Hiwin linear guideways
- Optimal for space-saving applications
- Easy installation

### 13.1 Specifications:

Signal resolution	5mm
Repeatability	$\pm 20\mu\text{m}$
Output signal	analog: SIN/COS 50mVp-p
Max travel speed	10m/sec
Input power	3.3VDC $\pm 5\%$
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP67

### 13.2 Ordering Code:



## 14. 5mm Signal Translator



ST-A-□□



ST-A-□□B

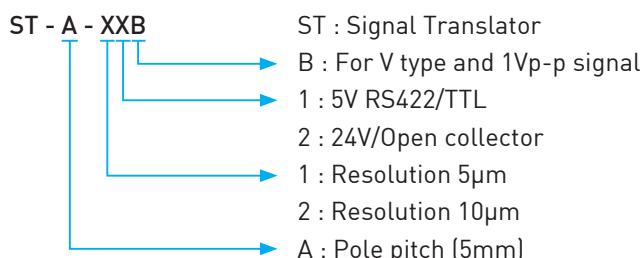
### Features:

- Converting an analog signal input into a digital signal output
- Output signal 5V RS422/TTL or open collector
- Suitable for precise position feedback to a PC or PLC connection

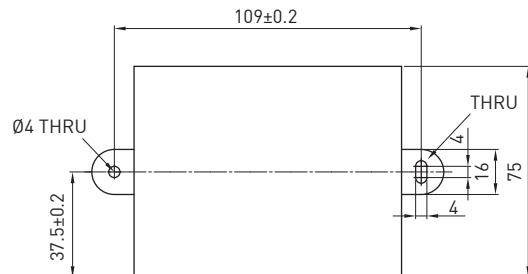
### 14.1 Specifications:

Type	ST-A-□□	ST-A-□□B
Accuracy	$\pm(80\mu\text{m}+15\mu\text{m}/\text{mxL})$ L: Length (unit: m)	$\pm(80\mu\text{m}+15\mu\text{m}/\text{mxL})$ L: Length (unit: m)
Repeatability	$\pm10\mu\text{m}$	$\pm10\mu\text{m}$
Signal resolution	5 or 10 $\mu\text{m}$	5 or 10 $\mu\text{m}$
Output pulse signal	5V RS422/TTL or open collector	5V RS422/TTL or open collector
Max output frequency	64KHz/32KHz (Resolution: 5/10 $\mu\text{m}$ mode)	0.25MHz/0.125MHz (Resolution: 5/10 $\mu\text{m}$ mode)
Power input	5VDC $\pm 5\%$ / 0.5A	5VDC $\pm 5\%$ / 0.5A
Max travel speed	1.2m/sec	5m/sec
Operating temperature	0°C~50°C	0°C~50°C
Storage temperature	-5°C~70°C	-5°C~70°C
Protection class	IP43	IP43

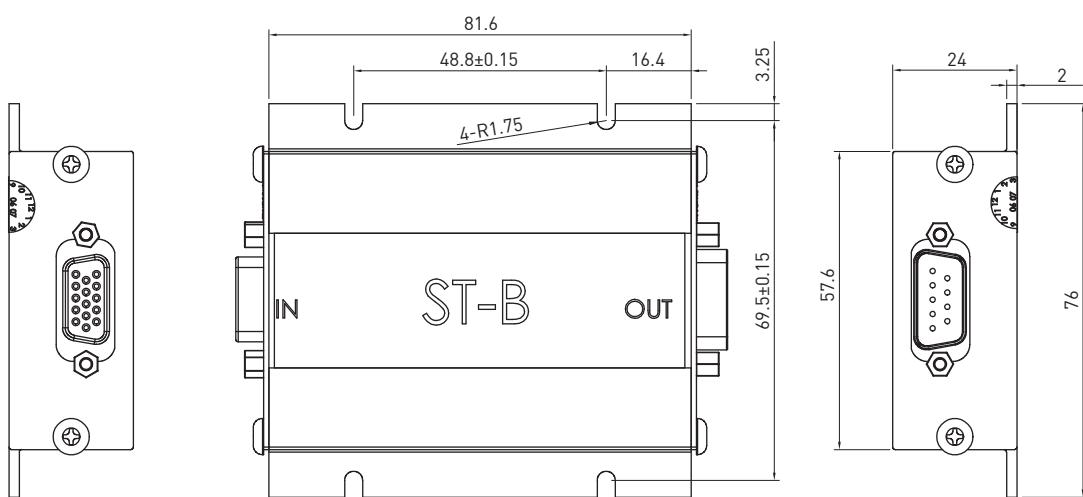
### 14.2 Ordering Code:



### 14.3 Dimensions:



Note: These dimensions are applicable for ST-A-□□



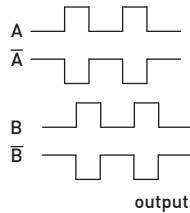
Note: These dimensions are applicable for ST-A-□□B

Unit: mm

## 15. Output Signal and Application

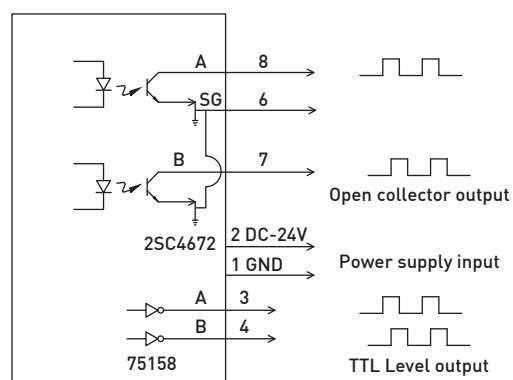
ST-A-□1 and ST-A-□1B: D-sub 9 pin definition for signal output connector

Pin No.	Signal	I/O
1	GND	I
2	DC5V	I
3	A	O
8	$\bar{A}$	O
4	B	O
7	$\bar{B}$	O
6	SGND	I



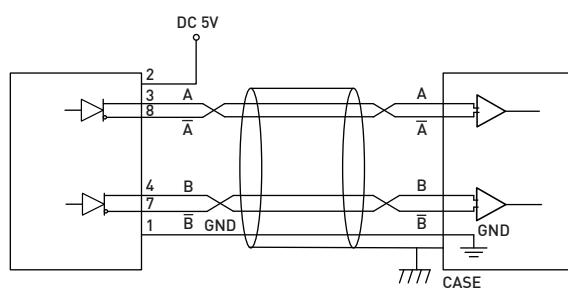
ST-A-□2 and ST-A-□2B: D-sub 9 pin definition for signal output connector

Pin No.	Signal	I/O
1	GND	I
2	DC24V	I
8	A (open collector)	O
7	B (open collector)	O
3	A (TTL level)	O
4	B (TTL level)	O
6	SGND	I



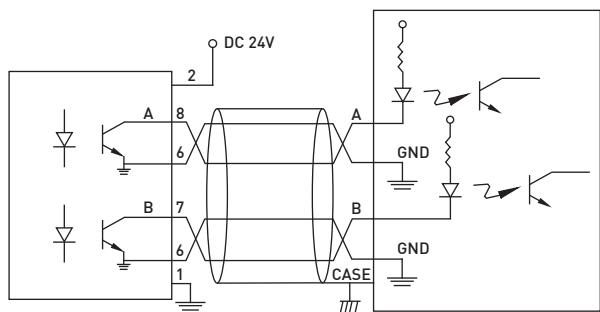
### Application:

ST-A-□1 and ST-A-□1B (5V RS422/TTL) Wiring



ST-A Translator

ST-A-□2 and ST-A-□2B (24V/O.C.) Wiring



PLC Counter signal

## III. Display and Counter

### 16. LCD Counter System



#### Features:

- LCD display using 2 AA batteries
- Embedded read head, suitable for cutting and wood-processing machines
- Memory mode available
- Compact and cost-effective

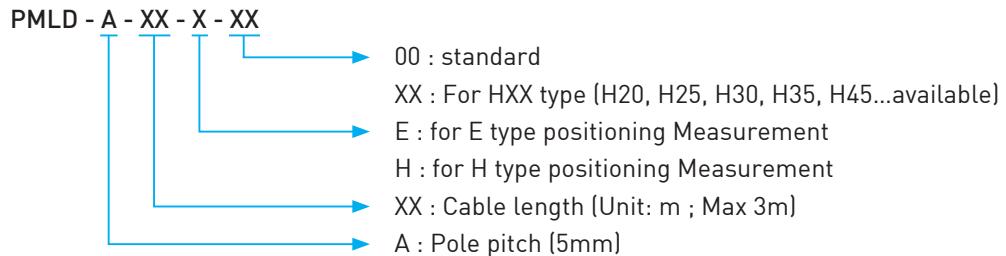
#### 16.1 Specifications:

Display	8 digit LCD display with +/- sign
Resolution	5µm
Accuracy	±(80µm+15µm/mxL) L: Length (unit: m)
Repeatability	±10µm
Operation speed	3m/sec (max 2G acceleration)
Input power	commercial AA No. 3 battery x 2
Battery life	1 year by setting it at 1.5m/s
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	positioning measurement IP67 display IP43

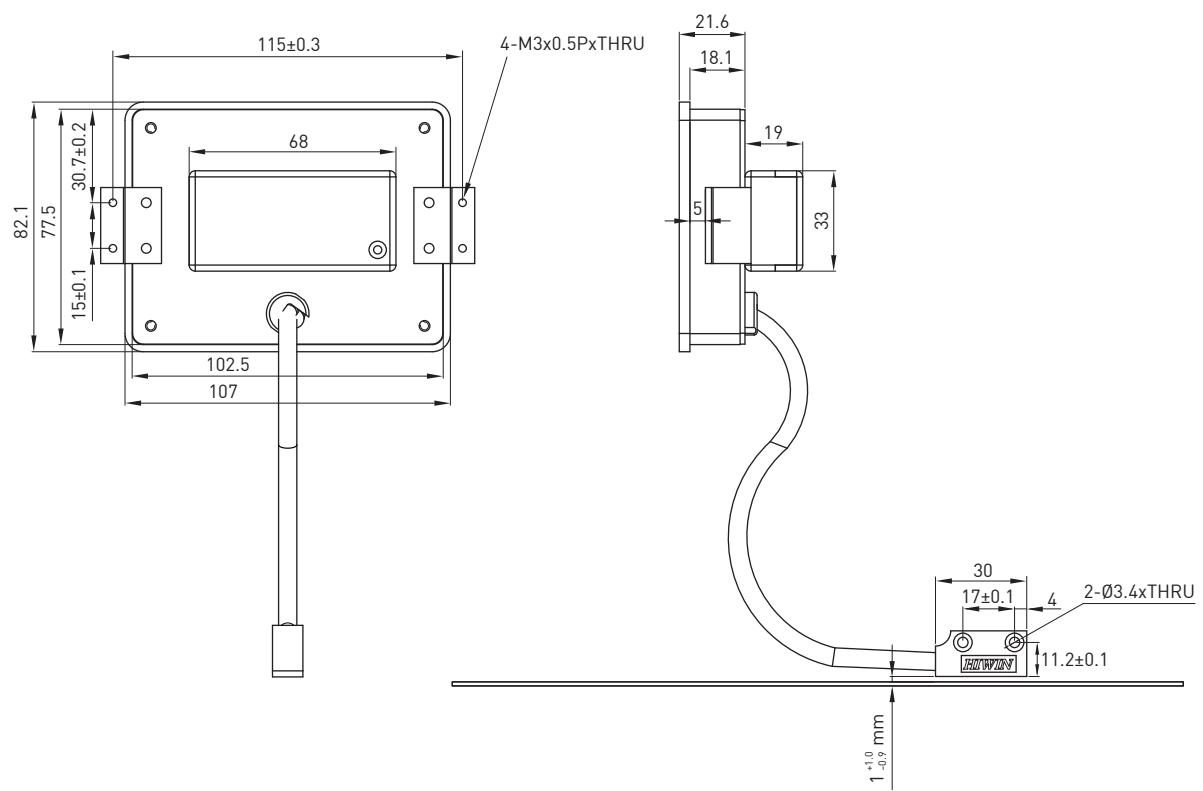
#### 16.2 Functions:

- Set reading direction
- Metric / English / angle measurement
- Set resolution
- 5 sets of independent incremental counters for relative positioning
- Set reference point
- Indicate gap of adjustment
- Save parameter-setting
- Lock keypad
- Indicate location of decimal point
- Measure absolute and relative position
- Programmable reference point compensation; 5 sets
- Maximal velocity setting (default : 1.5 m/s); 5 sets
- Set programmable coefficient ratio
- Indicate and monitor available power capacity
- Set programmable radius

### 16.3 Ordering Code:



### 16.4 Dimensions:



## 17. LED Counter System



### Features:

- LED Display
- Suitable for heavy-cutting and wood-processing machines
- Memory mode available
- Compact design and cost-effective

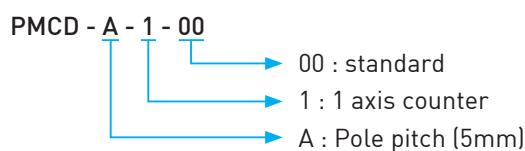
### 17.1 Specifications:

Display	8 digital LED Display
Resolution	5µm
Accuracy	±(80µm+15µm/mxL) L: Length (unit: m)
Repeatability	±10µm
Operation speed	3m/sec (max 2G acceleration)
Input power	5VDC ± 5% / 1A
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	positioning measurement IP67 display IP43

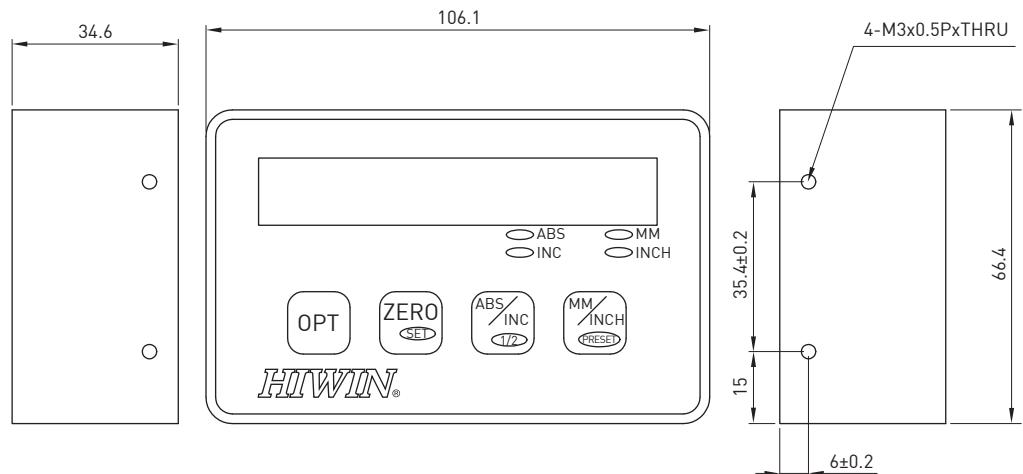
### 17.2 Functions:

- Up / down switch over
- Adjustable decimal point
- mm / inch switch over
- Absolute / incremental measurement

### 17.3 Ordering Code:



## 17.4 Dimensions:



Unit: mm

## 18. High Efficiency Single Axis Counter



### Features:

- LED display
- Can be used with other digital optical encoders
- Consists of multiple output interfaces
- Suitable for cutting and wood-processing machines
- Compact design and easy installation

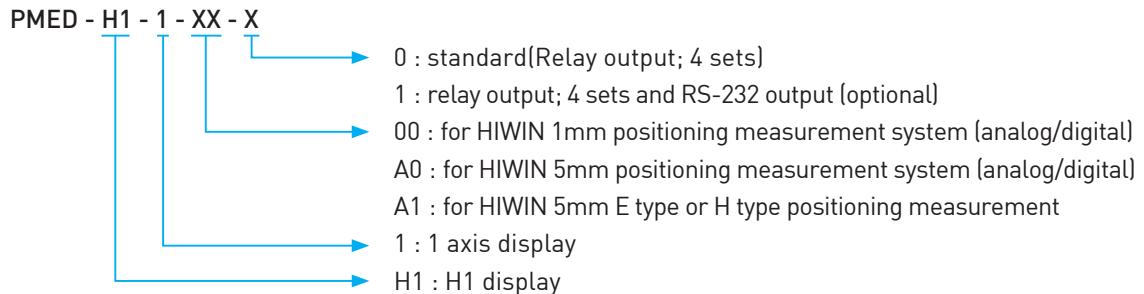
### 18.1 Specifications:

Display	8 digit LED display
Resolution	1µm, 2µm, 5µm, 10µm
Input signal	analog: SIN/COS 1Vp-p digital: 5V RS422/TTL
Frequency	analog: 2KHz digital: 0.5MHz
Input power	DC 5V ±5% / 1A
Relay contact rating	DC 24V/2A
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP43

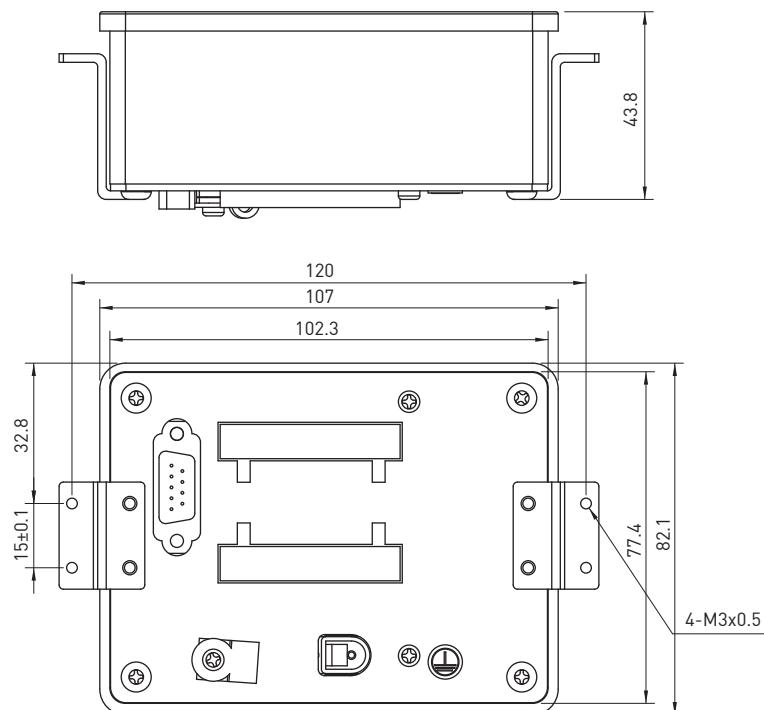
### 18.2 Functions:

- Zero and auto-center (1/2) function
- Incremental / absolute switch over
- mm / inch switch over
- Optional resolution: 1µm, 2µm, 5µm, 10µm
- Preset function; 8 sets
- Relay output function; 4 sets
- Current value read will be automatically saved during a temporary power failure
- RS-232 output (optional)

### 18.3 Ordering Code:

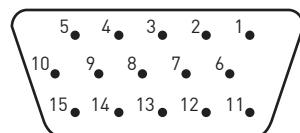


### 18.4 Dimensions:



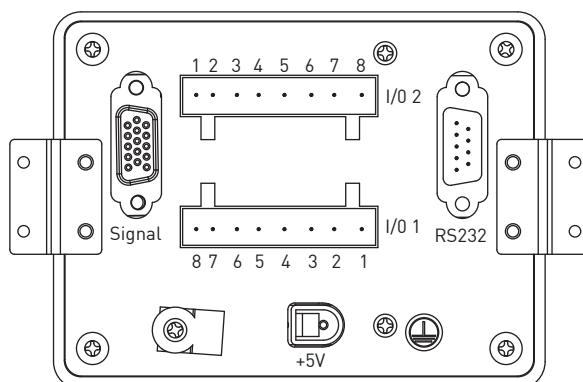
Unit: mm

## 18.5 Description of Input Signal:



Pin	Designation	Pin	Designation	Pin	Designation
1	+5V	6	FG	11	A+(Analog)
2	GND	7	Z+	12	A-(Analog)
3	A+(Digital)	8	Z-	13	B+(Analog)
4	B+(Digital)	9	A-(Digital)	14	B-(Analog)
5	NC	10	B-(Digital)	15	NC

## 18.6 Description of Relay Output Signal:



I/O 1		I/O 2	
Pin	Designation	Pin	Designation
1	NC	1	NC
2		2	
3	NC	3	NC
4		4	
5	Relay 0(CH-0)	5	Relay 2(CH-2)
6		6	
7	Relay 1(CH-1)	7	Relay 3(CH-3)
8		8	

## 19. Multi-axis Counter



### Features:

- LED display, high brightness
- Easy operation, suitable for cutting machines, traditional gantry milling machines, and programmable drilling machines
- Compact design and easy installation

### 19.1 Specifications:

Display	8 digit LED display
Resolution	0.1µm, 0.2µm, 0.5µm, 1µm, 2µm, 5µm, 10µm, 20µm, 50µm
Frequency	< 1.5MHz
Input signal	digital: 5V/TTL
Input power	DC 8V~30V / 0.08A
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP43

### 19.2 Functions:

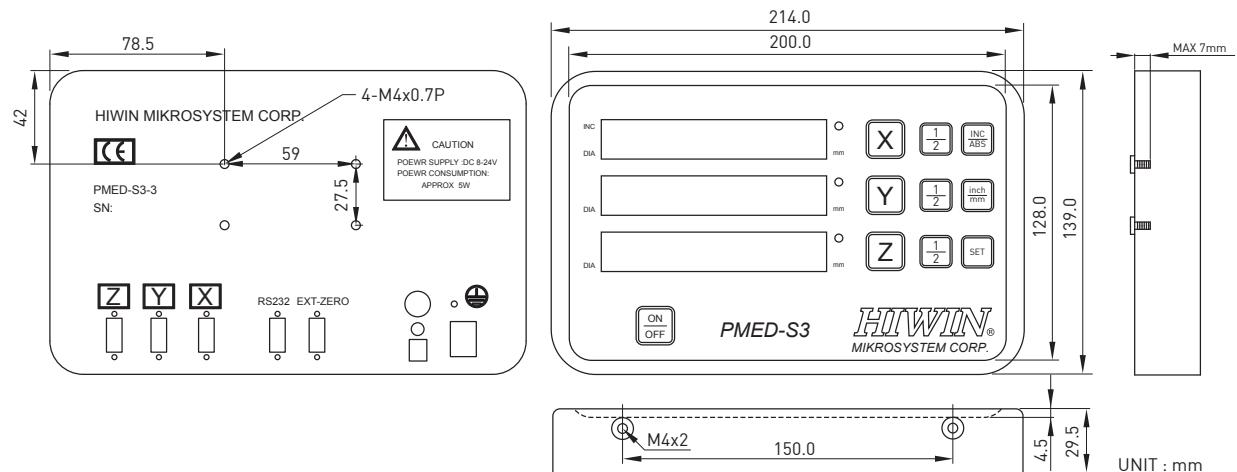
- Zero and auto-center (1/2) function
- mm / inch switch over
- Radius / diameter switch over
- Encoder (ENCODE): 1°~ 0.0001°
- Linear and non-linear mechanical error compensation
- Current value read will be automatically saved during a temporary power failure
- RS232 output
- Optional resolution : 0.1µm, 0.2µm, 0.5µm, 1µm, 2µm, 5µm, 10µm, 20µm, 50µm, 100µm, 200µm, 500µm, 1mm, 5mm, 10mm

### 19.3 Ordering Code:

PMED - S3 - X

2 : 2 axis display  
3 : 3 axis display  
S3 : S3 display

## 19.4 Dimensions:

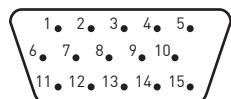


## STANDARD 15 PIN D-TYPE ASSIGNMENTS(F)

15 pin D-Sub signal (female)

NC : No Connection

FG : Frame Ground



## 20. High Efficiency Multi-axis Counter



### Features:

- LED display
- Suitable for CNC machine centers, gantry machine centers, milling machines and drilling machines
- Easy operation and installation

### 20.1 Specifications:

Display	8 digit LED display
Resolution	0.1µm, 0.2µm, 0.5µm, 1µm, 2µm, 5µm, 10µm, 20µm, 50µm
Frequency	< 2MHz
Input signal	digital: 5V/TTL
Input power	AC 90V~240V
Operating temperature	0°C~50°C
Storage temperature	-5°C~70°C
Protection class	IP43

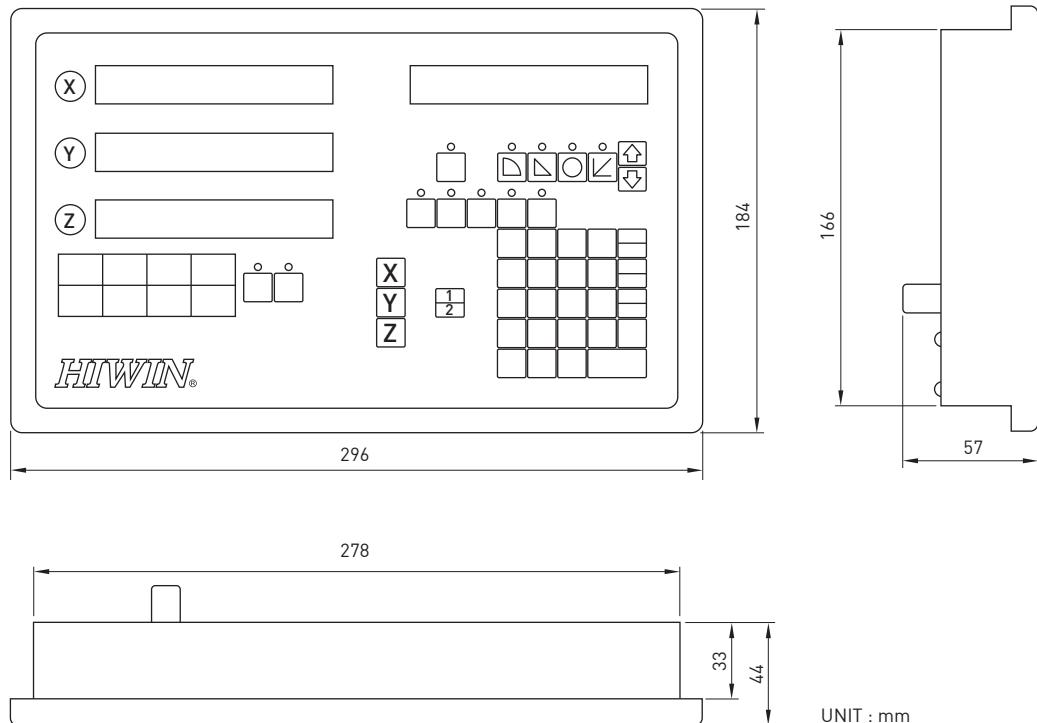
### 20.2 Functions:

- Zero and auto-center (1/2) function
- Radius / diameter switch over
- Incremental / absolute switch over
- 1000 sets of coordinate storage
- Peak rate and numeration
- Linear error compensation
- Slope manipulation
- Circular-arc manipulation
- Optional resolution: 0.1µm, 0.2µm, 0.5µm, 1µm, 2µm, 5µm, 10µm, 20µm, 50µm, 100µm, 200µm, 500µm, 1mm, 5mm, 10mm
- Multiple machining functions: Bolt circle machining, R-angle, divide holes on an oblique line, machining on an oblique line

### 20.3 Ordering Code:



## 20.4 Dimensions:

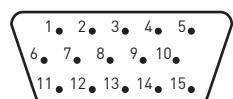


## STANDARD 15 PIN D-TYPE ASSIGNMENTS(F)

15 pin D-Sub signal (female)

NC : No Connection

FG : Frame Ground



1	2	3	4	5	6	7	8
+5V	0V	A	B	RI	FG	NC	NC
9	10	11	12	13	14	15	
NC	NC	NC	NC	NC	NC	NC	

## IV. Accessories

### 21. Signal Transfer Cable

Signal transfer cable for alternative display devices



#### 21.1 Ordering Code:

STC - XX - XX - X      STC: Signal Transfer Cable  
0 : standard type  
1 : with metal tube  
00 : D-sub VGA 15 Pin (for Hiwin display)  
01 : D-sub 15 Pin (for M brand display)  
01 : cable length 1m  
02 : cable length 2m

### 22. Positioning Scale Installation Fixture

Allows for easy installation and ensures that the scale is parallel to the measurement sensor throughout the entire stroke

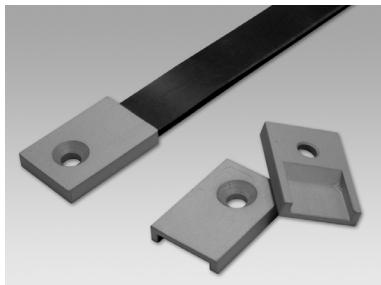


#### 22.1 Ordering Code:

PST - 01      PST : Positioning Scale Installation Fixture  
01: for standard type positioning measurement

### 23. Lateral Fixture

Used to mark the end of the scale

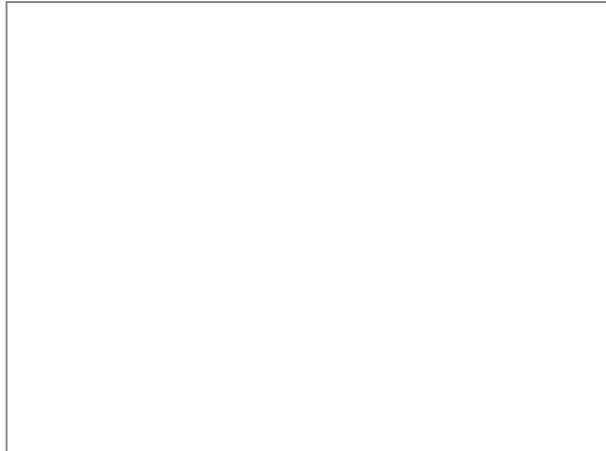


#### 23.1 Ordering Code:

PSF - 01      PSF : Positioning Scale Fixture  
01 : standard type



Linear Motion Products & Technology



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