

2-axis Inclinometer PEI-Z245-AL-xxx-1



low cost, small size and light weight

two-axis +/-45°

Serial Bus interfaces: RS232, RS485, TTL

Zero setting

Waterproof and Dustproof

Shock resistant 10'000g

Inclination side indication "+" or "-"

Frequency response adjustment.

Electrical Specification

Parameter	Value	Unit	Remark
Measuring Range	±45	degree	
Resolution	0.1	degree	
Repeatability	0.3	degree	@25°C
Accuracy (±45°)	<0.5	degree	RMS @25°C
Output Frequency ¹⁾	14	Hz	programmable
Operating Voltage ²⁾	5	V (dc)	5±0.25V
Operating Current	< 40	mA	

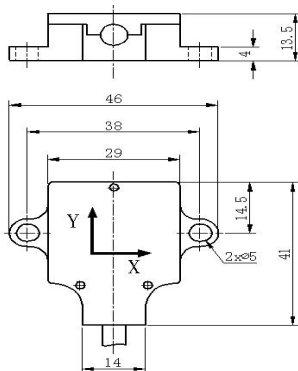
Note 1: Output frequency can be adjusted by "FILT**" command, default is 14Hz (about 1 Hz error)

Note 2: supply voltage: 5V standard, optional 7-15V.

Environmental Specification

Parameter	Value	Unit	Remark
IP Grade	IP68 / IP65		
Operating Temp.	-40~ +85	°C	
Zero Temp. Drift	0.03	degree/°C	-40~ +85°C
Size	46*41*13	mm	
Weight	115	g	

Mechanical Dimensions & Connection



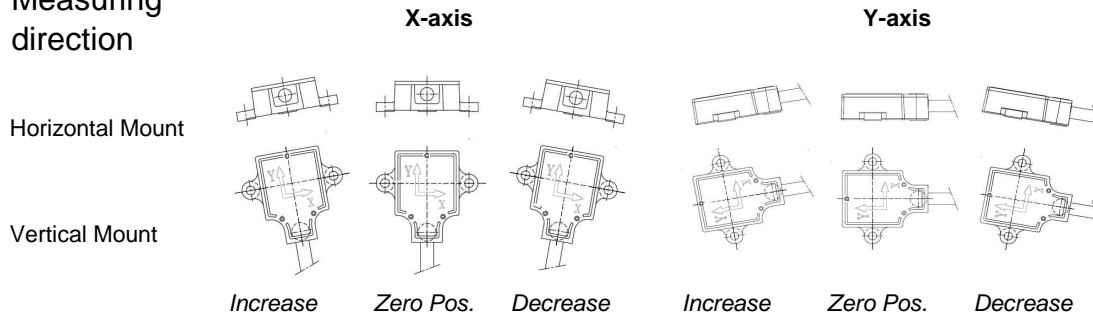
Wire color	RS485	RS232	TTL
Blue	485B	RX	RX
Green	485A	TX	TX
Red	VCC	VCC	VCC
Black	GND	GND	GND

Order informations

RS485 Interface:	PEI-Z245-AL-485-1
RS232 Interface	PEI-Z245-AL-232-1
TTL Interface (ASCII)	PEI-Z245-AL-TTL-1
IP68 option:	PEI-Z245-AL-xxx-1-WP

Note: -1: 5V supply, -2: 7-15V (optional)

Measuring direction



Note: Incorrect installation respective to sensor plane & axis will result in large angle errors.

User Instructions

ASCII Format

One set of data has 16bytes.

Byte1 : X

Byte2 : +/-

Byte3 : X-axis tens digit of angle value

Byte4 : X-axis units digit of angle value

Byte5 : point“.”

Byte6 : one digit after the decimal point of X-axis angle value.

Byte7 : 20

Byte8 : 20

Byte9 : Y

Byte10 : +/-

Byte11 : Y-axis tens digit of angle value

Byte12 : Y-axis units digit of angle

Byte13 : point“.”

Byte14 : one digit after the decimal point of Y-axis angle value.

Byte15 : 0d

Byte16 : 0a

Format :

ITEAM SIGNED DATA STOP

X/Y +/- *.* Enter/New line

For example :

If current x-axis angle value is +23.6 degrees and Y-axis is -0.1 degrees, it will display following:

X+23.6

Y-01.0

Note : 88.8 is displayed in case of overrange

Single byte transmission format: 1 start bit, 8 data bits, 1 stop bit.

Hex Format

bit15 : 1 : X-axis 0 : Y-axis

bit14 : 1 : negative 0 : positive

bit13-bit0 : angle value $\times 10$

Eg. the current angle of X-axis is +23.6degrees: 0x80EC

0x 8000 + (23.6 $\times 10=236$, its hex format is 0x00EC)

In hex a set of data consists of 5bytes, in which two bytes for X-axis, two bytes for Y-axis and 0A for marks byte.

Serial communication command

Command sort	Command word	function	Response symbol	remark
	\$	Perform "stop sending, receiving command"		Stop sending and collecting data, waiting for receiving command.
Operating state	@P	Output angle value		Angle output mode, default state after power on is absolute angle output.
Operating parameter	FILT**	Set output frequency	setfilt**	output frequency setting; available values for "***" : "01, 03, 05, 07, 10, 14, " For example : FILT05 = 5Hz output.
	&Z	Set zero	set zero	Setting current position as relative zero degree. Output values will be relative to this zero point. Will be resetted after power on.
	&R	Perform conversion of relative and absolute angle.	R	Relative and absolute angle output. Outputs "R" after the command is accepted, will be resetted after power on.
display format	*AS	Perform ASCII communication	ascii	ASCII communication, default display format.
	*HE	Perform Hex communication	hex	Will be resetted after Power on
Output mode	*n (lower case)	Perform continuous output mode		Default mode is Continuous output. A change of the output mode will be stored in the EEPROM.
	*P (capitalization)	perform single step output mode		
	@??	perform data group for single step output mode	set??	Set data sets of single output, "??" values range from 01 to 99; default is 01.
Baud rate	*4800B	Baud rate 4800	baud4800	Default Baudrate is 9600. Changing the Baudrate in continuous mode will take effect immediately, and changing it in single step mode needs a power-on to take effect.

The software version will be sent out first After power-on

Continuous output is the default output mode

Please distinguish upper/lower case when entering command word.

Specifications are subject to change without notice



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