

PEI-Z245SS-TTL-1 Dual-axis inclinometer specification



- Serial communication TTL
- Stainless steel housing
- IP68
- M12 standard connector
- “+” and “-” value indication
- Zero setting
- Programmable output rate

Technical specification

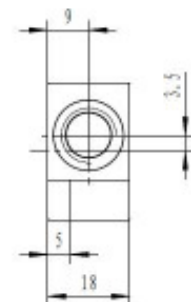
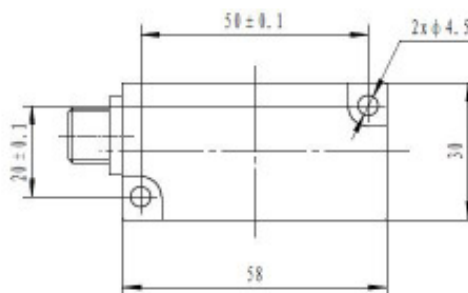
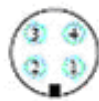
	Parameter	Condition	Min.	Typ.	Max.	Units
Electrical characteristics	Supply voltage		4.75	5	5.25	VDC
	Static oper. current	Power supply is 5V			20	mA
	Operating temperature		-40		85	°C
Performance characteristics	Measuring range		-45		45	°
	Resolution			0.1		°
	Accuracy	RMS		±0.5		°
	Zero Temp. Drift	-40~+85°C		±0.03		°/°C
	Output Frequency		1		14	Hz
Others	Outline size			58*30*18		mm
	Anti-shock	1ms		1000		g
	Anti-vibration	10-500Hz		10		g
	IP grade	2m underwater, 2 hours			IP68	

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

Note 2: measuring range is 2 axis,+/-45°.

Connection and Size:

1 VCC
2 TXD
3 RXD
4 GND



Ordering information:

PEI-Z245SS-TTL-1-F M12 female, w/o plug

PEI-Z245SS-TTL-1 M12 male, with plug and 1m cable

Data output format:

Output in ASCII or Hex format.

Default values: 9600bp/s data rate. Single byte transmission format: 1 start bit, 8 data bits, 1 stop bit.

1、ASCII format

One set of data has 16 bytes.

Byte	Function,signal,data	Value in Hex format
Byte1	X	58
Byte2	+/-	2B/2D
Byte3	X-axis tens digit of angle value	30~39
Byte4	X-axis units digit of angle value	30~39
Byte5	point“.”	2E
Byte6	one digit after the decimal point of X-axis angle value.	30~39
Byte7	space“SP”	20
Byte8	space“SP”	20
Byte9	Y	59
Byte10	+/-	2B/2D
Byte11	Y-axis tens digit of angle value	30~39
Byte12	Y-axis units digit of angle	30~39
Byte13	point “.”	2E
Byte14	one digit after the decimal point of Y-axis angle value.	30~39
Byte15	enter“CR”	0D
Byte16	New line“LF”	0A

If current x-axis = +12.5 degrees and Y-axis = -7.3 degrees, it will output

X + 1 2 . 5 (0x20) (0x20) Y – 0 7 . 3 (0x0D) (0x0A)

Note : 88.8 is displayed in case of overrange

2.Hex Format

In hex format, there are 5 bytes in total, the first 2 bytes are X angle value, the second 2 bytes are Y angle value, the last byte is 0A (which represent end).

For the angle value of X and Y axis, the first highest bit 1 represent X axis,0 represent Y axis.

The second highest bit 1 represent minus angle value, 0 represent positive angle value

For example:

X-axis = +23.6degree, Y axis = -45 degree, Display 80 EC 41 C2 0A

0x8000 + (23.6×10=236 translate into HEX is 0x00EC) X axis output is 0x80EC
 0x4000 + (45×10=450 translate into HEX is 0x01C2) Y axis output is 0x41C2

User Instructions

Serial communication command

	Command word	function	Response symbol	remark
Operating state	\$	"stop sending, receiving "		Stop sending and collecting data, waiting for receiving command.
	@P	Output angle value		Angle output mode, is default state after power on.
Operating parameter	FILT**	Set output frequency	setfilt**	output frequency setting available value : "01, 03, 05, 07, 10, 14, " FILT05, means 5Hz output.
	&Z	Set zero	set zero	Consider current position as relative zero degree, outputs relatively, is not kept after power off.
	&R	conversion of relative and absolute angle.	R	Relative and absolute angle output. Output "R" after accept command, is not kept after power off.
display format	*AS	ASCII communication	asii	ASCII communication, default display format.
	*HE	Hex communication	hex	is not kept after power off.
Output mode	*n (lower case)	continuous output		Default setting is continuous output, when output mode is changed, information will be stored in EEPROM.
	*P (capitalization)	single step output		
	@??	data group for single step output	set??	Set data sets of single output, "??" is from 01 to 99; default is 01.
Baud rate	*4800B	Baud rate 4800	baud4800	It will immediately be effective under continuous output mode, it will be effective after power on under single step output mode. default is 9600.
	*9600B	Baud rate 9600	baud9600	
	*1920B	Baud rate 19200	baud19200	

Note 1: After power-on SW-Version is sent to PC

Note 2: Default mode is continuous output mode.

Note 3: Please distinguish upper/lower case when entering command word.

Specifications subject to change without notice!

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