precaster

CA109

Distance Measuring Module Specification

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1. INTRODUCTION

CA109 is designed as a compact and reliable laser distance measuring sensor. The phase shifting reflectorless technology gives good accuracy and response time in distance measuring. It is a compact and customizable LDM sensor.

FEATURE

a. Compact and fit for most heavy duties.
b. Digital output with UART, RS232, or RS485
c. Non-contact measuring with low power consumption.

APPLICATION

d. Robot eyes distance measuring
e. Positioning and monitoring of objects
f. Security application movement detections
g. Level and elevator measuring

2. SPECIFICATION

Model	CA109A	CA109B	CA109C
Single measuring range*	0.05m~30m	0.05m~50m	0.05m~70m
Continuous measuring range*	0.05m~30m	0.05m~50m	0.05m~70m
Measuring Frequency**	0.5~1 second for each measure		
Typical Accuracy*	±2mm		
Accuracy With CA6****	±1mm		
Power	9V~28V ±0.2V (DC Jack)		
Warm-up Time	<5 seconds		
Laser output power	0.6mW~0.95mW		
Operation Temperature	-5℃~40℃		
Storage Temperature	-20℃~60℃		
Output Interface***	RS-232	RS-485	

*Applies for well reflectivity target (e.g: Kodak whiteboard), low background illumination, 25°C, with a low reflectivity target, could decrease measuring range and increased errors which may defer by the at and environment situation, tolerances apply from 0.05 m to 10 m with a the confidence level of 95%. The maximum tolerance may deteriorate to 0.25 mm/m after 10 meters.
**Measuring range, accuracy is deeply related to measuring speed. A higher measuring the frequency will series effect range and accuracy, please do contact with our reps for more discussion.
***Need to be decided prior order.
****Work with target CA6 target plate, under favorable condition, tolerances apply from 0.05 m to 10 m with a confidence level of 95%. The maximum tolerance may deteriorate to 0.1 mm/m after 10 meters.

3. PROTOCOL & DATA FORMAT

a. Protocol: RS-232 or RS-485

b. Baud Rate: 9600bps

c. UART Interface

RS-232

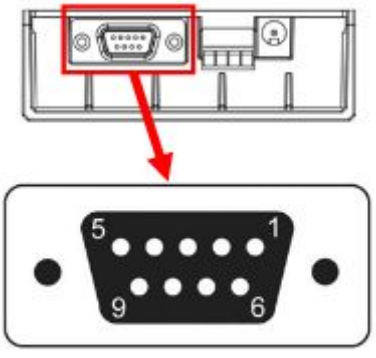
DB9 Female	1	2	3	4	5	6	7	8	9
		TXD	RXD		GND				

RS-485

DB9 Female	1	2	3	4	5	6	7	8	9
	D+	D-			GND				

RS-422

DB9 Female	1	2	3	4	5	6	7	8	9
	D+	D-			GND				



DB9F

d. Commands ASCII Char

- 0x6C (ASCII = l): Laser Power On
- 0x6D (ASCII = m): Measure Trigger
- 0x6E (ASCII = n): Single Measure
- 0x63 (ASCII = c): Continuous Measure
- 0x73 (ASCII = s): Laser Power Off or Stop Continuous Measure
- 0x61 (ASCII = a): Launch Area Measuring Procedure
- 0x64 (ASCII = d): Launch Dimension Measuring Procedure
- 0x78 (ASCII = x): Launch Indirectly Measuring by Pythagoras

e. Output:

Outputs are totally 8 ASCII Chars, Unit is Meter:

Output in meter	Char 1	Char 2	Char 3	Char 4	Char 5	Char 6	Char 7	Char 8
Single Measure= 12.345	#	A	1	2	.	3	4	5
Area Length= 5.000	#	B	0	5	.	0	0	0
Area Width= 20.000	#	C	2	0	.	0	0	0
Area= 100.00	#	D	1	0	0	.	0	0

f. Char 2 – Function Table

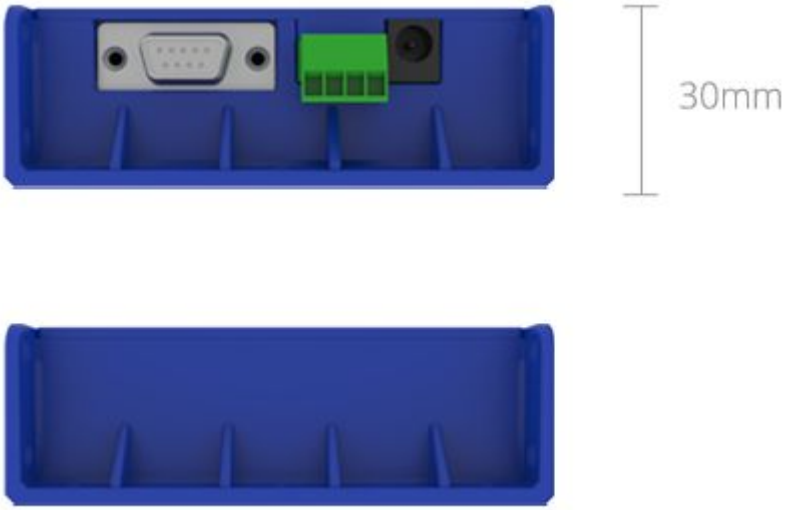
Function	Char 2
Single Measure	A
Area Length	B
Area Width	C
Area	D
Dimension Length	E
Dimension Width	F
Dimension Height	G
Dimension	H

Function	Char 2
Pythagoras 1	I
Pythagoras 2	J
Pythagoras 3	K
Error code	Z

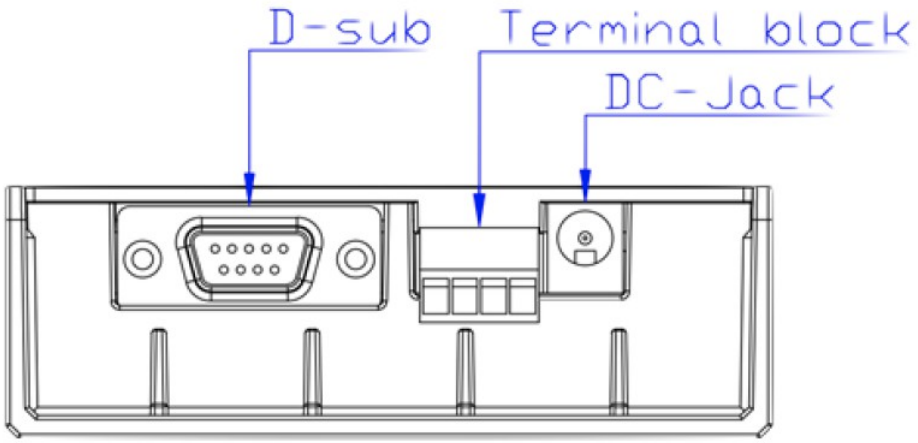
g. Each error code has totally 8 ASCII Chars,
   - #Zerror1: Out of range
   - #Zerror2: Low reflections.
   - #Zerror3: Out of display range
   - #Zerror4: Pythagoras Calculation Error (Formula Error)
   - #Zerror5: Low input voltage.
   - #Zerror6: Out of operation temperature

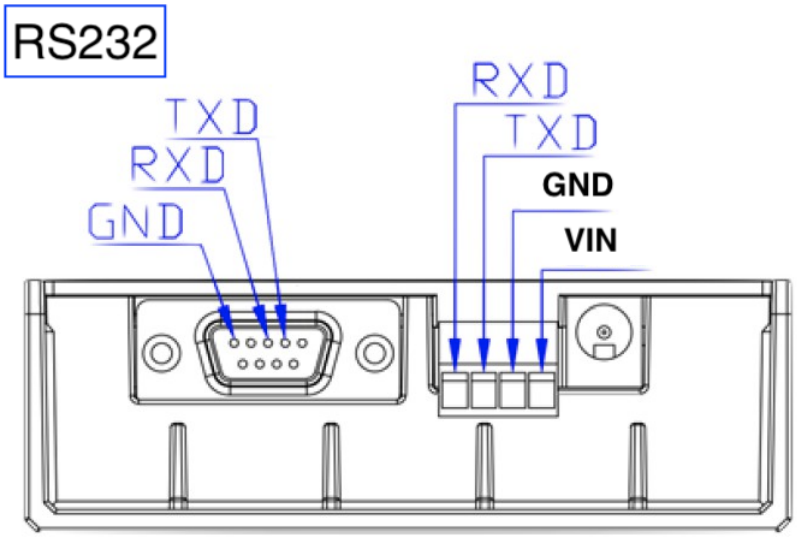
4. DIMENSION

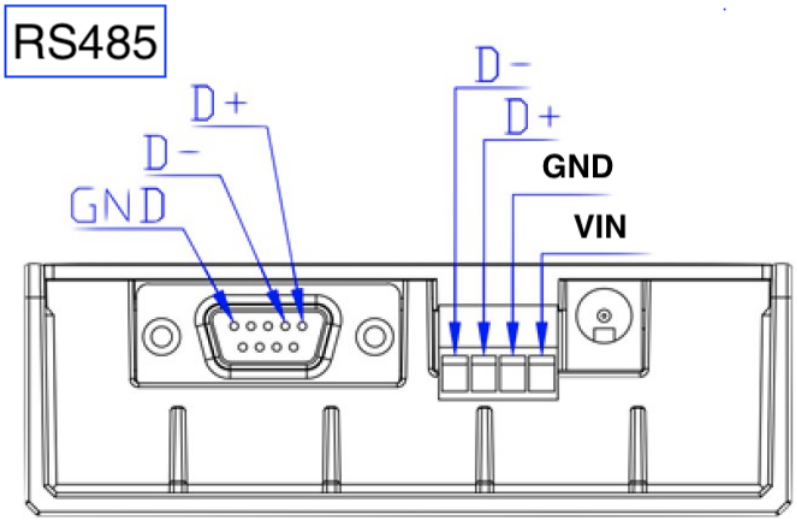

90mm
INPUT : 9V-28V
ON
OFF
Laser Distance Module
CA109
RS-485
RS-232
60mm
Ø4.9mm


30mm

5. CONNECTION







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