

AiM InfoTech

AiM ECLIPSE  
Car/bike linear  
potentiometer

Release 1.00

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# 1

## Introduction

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This datasheet shows how to install car/bike the AiM – Eclipse linear potentiometer sensor. The sensor is available with different travel and electrical connections.

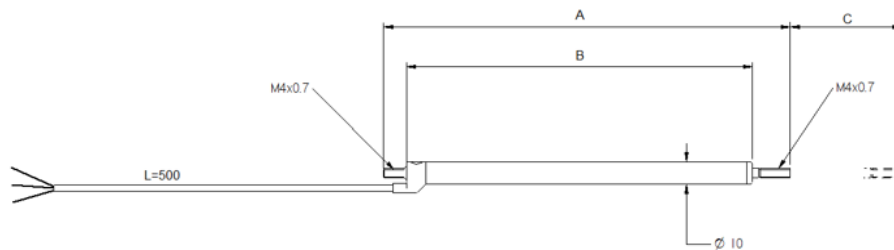
AiM logger can measure the displacement between two points using a sensor (linear potentiometer) directly connected to the points of measure. This potentiometer can measure linear displacement like:

- dampers compression or extension
- steering rotation measured through the rack displacement

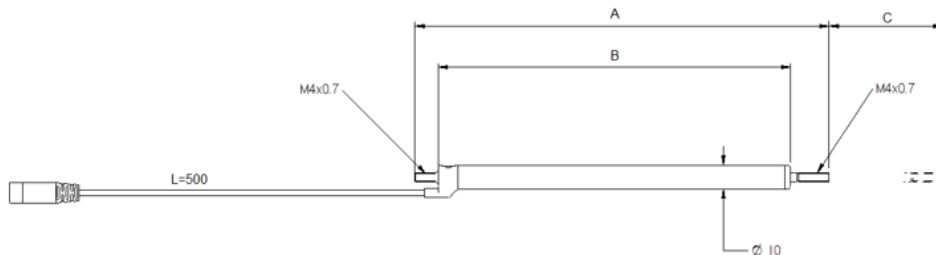
## 2 Dimensions and function

The drawing below shows sensors dimensions in millimetres, cabling is supplied with High Temperature harness as:

- **Flying Wires**



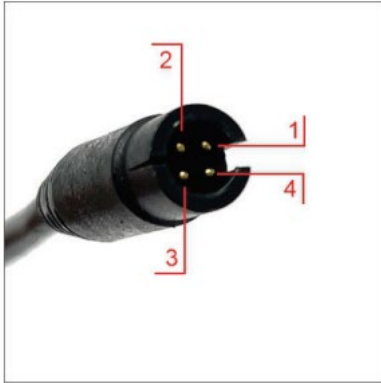
- **719 4C male binder connectors for AiM devices**



With reference to the drawing above the table here below shows the proportional growth of "A", "B" and "C" dimensions.

Potentiometer travel (C)	"A" – Retracted mounting distance	"B" Sensor body length
50 mm	165 mm	131 mm
75 mm	190 mm	156 mm
100 mm	215 mm	181 mm
125 mm	240 mm	206 mm
150 mm	265 mm	231 mm
175 mm	290 mm	256 mm
200 mm	315 mm	281 mm
225 mm	340 mm	306 mm
250 MM	365 mm	331 mm

The sensor ends with a 4 pins binder 719 male connector. here below the connector view – sensor side on the left and device send on the right – are shown, while in the following table is connector pinout.



**Pin**

- 1
- 2
- 3
- 4

**Function**

- Analog signal
- GND
- Not connected
- Vref 5 Vdc

**Wire colour**

- White
- Black
- 
- Blu

The pinout of the sensor with FREE WIRES is describe in the following table



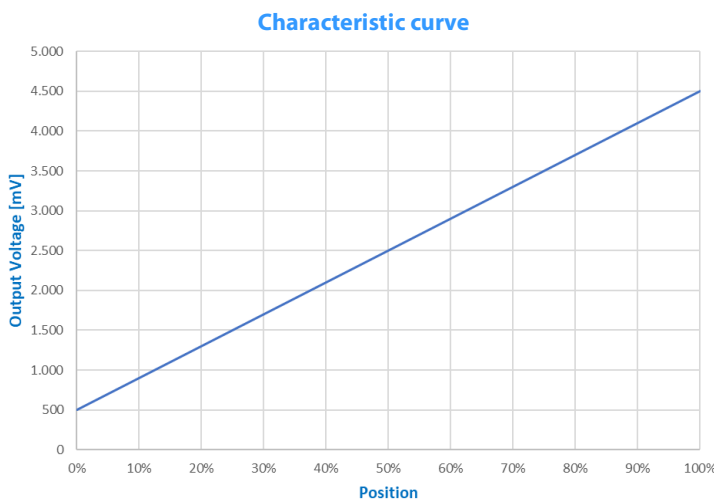
- Function**
- Analog signal
  - GND
  - Vref 5 Vdc

- Wire colour**
- White
  - Black
  - Blu

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## Technical characteristic sensor

Signal output ranges from 500 to 4500 mV to enable fault detection:



**Diagnostic Features:**

Reading: < 100 mV-> FAULT (**open circuit**)  
 Reading: > 4900 mV -> FAULT (**short circuit**)

The sensor technical characteristics are:

**Technical feature**

**Value**

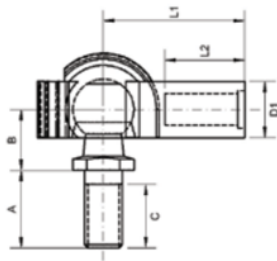
Output signal	Vref 5 Vdc
Signal Output	500 mV/ 0
Repeatability	4500 mV/ full range
Operational speed	≤ 0.01 mm
Mechanical life	≤ 10 m/s
Independent linearity	>25 million cycles
Temperature working range	≤±0.5%
Waterproof	from -30°C to +100°C
Housing	IP65
Shaft	Fiberglass reinforced epoxy resin
Weight	Carbon fiber
Cable type	20÷40 g
Cable length	High temp M22759 AWG26 wires, Viton Sleeve
Mounting interface	500 mm
	M4x0.7 male thread

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# Mounting mechanical interfaces

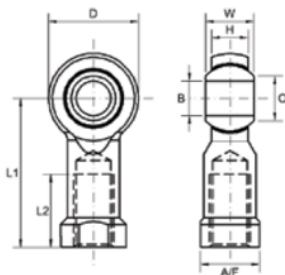
AiM ECLIPSE linear potentiometer end has M4x0.7mm male thread on both ends, quick release balljoint or rod end bearing are available as optional.

- **JPCJN0290** pop joint



Body Thread	Stud Thread	Ball Dia	L1	L2 Min	Stud A/F	A	B	C Min	D1
M4X0.70	M4X0.70	6	17	10	5	6.5	8.5	5.5	8.0

- **JPCUBHQA009** ball joint:



Bore Size	Thread	W	H	D	L1	L2	O	AF
5	M4X0.70	8	6.00	16	27.0	14.0	9.0	9.0

## 5 Part numbers

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The sensor **part number** is:

### Sensor ends with plastic **male Binder 719**

	<b>no joints</b>	<b>ball joint</b>	<b>pop joint</b>
50 mm	X05ELP050A	X05ELP050ABJ	X05ELP050APJ
75 mm	X05ELP075A	X05ELP075ABJ	X05ELP075APJ
100 mm	X05ELP100A	X05ELP100ABJ	X05ELP100APJ
125 mm	X05ELP125A	X05ELP125ABJ	X05ELP125APJ
150 mm	X05ELP150A	X05ELP150ABJ	X05ELP150APJ
175 mm	X05ELP175A	X05ELP175ABJ	X05ELP175APJ
200 mm	X05ELP200A	X05ELP200ABJ	X05ELP200APJ
225 mm	X05ELP225A	X05ELP225ABJ	X05ELP225APJ
250 mm	X05ELP250A	X05ELP250ABJ	X05ELP250APJ

### Sensor ends with **Flying Wires**

	<b>no joints</b>	<b>ball joint</b>	<b>pop joint</b>
50 mm	X05ELP050FW	X05ELP050FWBJ	X05ELP050FWPJ
75 mm	X05ELP075FW	X05ELP075FWBJ	X05ELP075FWPJ
100 mm	X05ELP100FW	X05ELP100FWBJ	X05ELP100FWPJ
125 mm	X05ELP125FW	X05ELP125FWBJ	X05ELP125FWPJ
150 mm	X05ELP150FW	X05ELP150FWBJ	X05ELP150FWPJ
175 mm	X05ELP175FW	X05ELP175FWBJ	X05ELP175FWPJ
200 mm	X05ELP200FW	X05ELP200FWBJ	X05ELP200FWPJ
225 mm	X05ELP225FW	X05ELP225FWBJ	X05ELP225FWPJ
250 mm	X05ELP250FW	X05ELP250FWBJ	X05ELP250FWPJ

Mounting interfaces are available as option, below the part number interface mounting:

Pop joint	JPCJN0290
Ball joint	JPCUBHQSA009

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# Extension cables

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The sensor is sold with a 50 cm cable. Standard lengths extension cables are available as optional; it is also possible to ask for specific length extension cables.

Extension cable's part numbers change according to their length and to device the sensor is to be connected to.

Mandatory extension cable for connection with:

- EVO4S
- Channel Expansion

Part numbers:

- V02PCB05BTXG** – cable length: 500 mm
- V02PCB10BTXG** – cable length: 1000 mm
- V02PCB15BTXG** – cable length: 1500 mm
- V02PCB20BTXG** - cable length: 2000 mm
- V02PCB25BTXG** - cable length: 2500 mm
- V02PCB30BTXG** - cable length: 3000 mm



Extension cable for connection with:

- MXG1.3/MXG1.2/MXG      MXG1.3 Strada/MXG1.2 Strada
- MXG1.3/MXG1.2/MXG      MXG1.3 Strada/MXG1.2 Strada
- MXP1.3/MXP              MXP1.3 Strada/MXP Strada
- MXPS
- MXsl
- MXm
- EVO5
- MXL2
- PDM08 /PDM32

Part numbers:

- V02PCB05B** – cable length: 500 mm
- V02PCB10B** – cable length: 1000 mm
- V02PCB15B** – cable length: 1500 mm
- V02PCB20B** - cable length: 2000 mm
- V02PCB25B** - cable length: 2500 mm
- V02PCB30B** - cable length: 3000 mm

