AiM Infotech

Car/bike linear potentiometer Race Studio 2 configuration – suspensions

Release 1.00







1 Introduction

The car/bike linear potentiometer is supported by both AiM configuration software and can measure the dampers compression or extension as well as the steering rotation measured through the rack displacement. In this datasheet you will:

- load it in the logger configuration using **Race Studio 2**
- use it to measure **dampers** compression or extension

2 Setup with Race Studio 2

To load the potentiometer in AiM logger configuration, with the logger switched on and connected to the PC:

- run the software, select the logger in use and the configuration to set the potentiometer on
- enter "Channels" layer, select the channel where to set the potentiometer on (in the example channel 3) and select "Distance potentiometer" in "Sensor type" column as shown here below.

	System manager											
Carlos Data Pears	Trans		Receive	CAN-Net info	\$	nartyCam Function setting	* 🔕	Set acquisition system time				
AIM Sportline	Current configuration								2			
orid Leader in Data Acquisition	Installation name	Data logger type	Ecu	Lap Timer	Vehicle name	Available	time	Time with GPS	Total frequency M	laster frequency	Expansions fre	quency Tot. Expansions
	LOGGER_CONF	MOL PISTA	None - None	by GPS	READ	9.32.39	(h.m.s)	4.06.35 (h.m.s)	121 (Hz) 1	21 (Hz)	0 (Hz)	0
A <u>n</u> alysis	Select configuration	Channels System configu	ration CAN-Expansions of	onfigurator								
Download Data	Wheel circumference	(mm) 1666										
Import SmartyCam	Channel identifier	Enabled/disabled	Channel name		Samolino	frequency	Sensortune		Measure	sun four	w cale	High scale
microSD Data	RPM	Enabled	Engine		10 Hz	*	Ingine revolut	tion speed	(PD)	0		20000
	SPD 1	Enabled	Speed 1		10 Hz		Speed		≚ km/h 1	- 00)	250.0
Device Configuration	CH 1	Enabled	Channel 1		10 Hz		Generic linear	0-5 V	× V 4	- 0.0	5	5.0
	CH 2	Enabled	Channel 2		10 Hz		Generic linear	0-5 V	- V 1	- 0.0)	5.0
	CH 3	P Enabled	Channel 3		10 Hz		Mid zero pote	ntiometer	mm -1	- 0/	>	5.0
Device Info	CH_4	Enabled	Channel 4		10 Hz		Pressure VDO	0-5 bar	A V 1	- 0.0	0	5.0
Correctingo	CH 5	Enabled	Channel_5		10 Hz		Pressure VDO	0-10 bar	V J	- 0/	5	5.0
	CH 6	F Enabled	Channel 6		10 Hz	لغم	AIRBOX pressu	ure sensor - X055NAB01	× 1	- 0.0	0	5.0
Online	CH/7	Enabled	Channel_7		10 Hz	1	Distance poter	ntiometer	V.1	- 0.0	5	5.0
	CH,8	Enabled	Channel 8		10 Hz	-1	Zero based po	tentiometer ^I IS	1	-1 0.0	0	5.0
	CALC_GEAR	Disabled	Calculated_Gea		10 Hz	-	Lambda senso	ROSCH	3	0		9
Device Calibration	ACC_1	Enabled	LetAcc		10 Hz	•	Lambda senso Generic linear	<pre>w NGK TL7111W1 - NTK T 0.5 U</pre>	C6110 g .01	-3	.00	3.00
and a second	LOG_TMP	Enabled	Datalogger_Tem		10 Hz	-	Generic linear	0-500 mV	*C	- 0		50
	BATT	Enabled	Battery		1 Hz	•	Generic linear	0-50 mV	V 1	5.0	3	15.0
Customize Sensor							SEAT Engine P SEAT Water Temp Si Oil Press Suzui Status signal Water Temp Y Temp Weber A Dil pressure N Water Temp Weber A Dil pressure N Fuel level AVIORACE_SP AEM 30 PSI IN Kavico S0 PSI IN Kavico S0 PSI IN Kavico S0 PSI IN	hessure importure uzuki GSXR id GSXR XTS 40 (2200 Ohm) agano KM10 CCU-ONE (0.65 - 1,6 famb 35, Pressure sensor Hg/PSI Press sensor Press sensor Press sensor sensor vest sensor	uda)			



- click out of the cell, a panel appears bottom left of the layer as below: **please ensure to always** scroll the page to bottom
- insert potentiometer maximum travel (in the example 75 mm)
- transmit the configuration to the logger pressing "Transmit" in the software top keyboard.

and	System manager													
Ratirg Data Power	Transr	« 🗒	Receive	CAN-Net info	SmartyCan set	n Functi ting	ons 👩	Set acquisition system time						
AIM Sportline	Current configuration													
Id Leader in Data Acquisition	Installation name	Data logger type	Ecu	Lap Timer	Vehicle name	Availab	ie time	Time with GPS	Total frequency M	ster frequer	cy Expansi	ons frequency	Tot. Expansions	
	LOGGER_CONF	MXL PISTA	KTM - X-BOW	by GPS	READ	3.42.4	7 (h.m.s)	2.27.06 (h.m.s)	311 (Hz) 31	1 (Hz)	0 (Hz)		0	
A <u>n</u> alysis	Select configuration Speed_1	Channels System config.	ration CAN-Expansions	configurator										
Download Data	Wheel circumference Pulses per wheel revo	(mm) 1666 Aution 1												
Import SmartyCam	Channel identifier	Enabled/disabled	Changel game		Sameling frequen	-	annor hanna		Maximum	a li	uu ceala	High co	ale.	
microSD Data	RPM	Disabled	Engine		10 Hz	-1	Ingine revolution	n speed	rom			20000		
	SPD 1	Enabled	Speed 1		10 Hz		oeed		× km/h 1	× 0	0	250.0		
Device Configuration	CH 1	Finabled	Channel 1		10 Hz	- 1	Seneric linear 0-	5 V	• V.1	- 0	0	5.0		
	CH 2	Enabled	Channel 2		10 Hz		Seneric linear 0-	5 V	. V 1		-100		5.0	
	CH 3	Enabled	Channel 3		10 Hz		Distance potenti	ometer	-1 mm .1	- 0	0	5.0		
Device Info	CH 4	Enabled	Channel 4		10 Hz	- 1	Generic linear 0-5 V		- V 1	- 0	0	5.0		
beries into	CH.5	Enabled	Channel 5		10 Hz Generic linear 0-5 V		± v 1	-10	0	5.0				
	CH_6	Enabled	Channel_6		10 Hz		Seneric linear 0-	5 V	- V 1	· 0.	0	5.0		
Online	CH 7	F Enabled	Channel 7		10 Hz	-10	Seneric linear 0-	5 V	-1 V 1	-10.	0	5.0		
Zunne	CH.8	F Enabled	Channel 8		10 Hz	e 🖃 Gr		5 V	-1 v 1	- 0.	0	5.0		
	CALC_GEAR	☐ Disabled	Calculated_Gea		10 Hz	-	Calculated Gear		4	0		9		
Device Calibration	ACC_1	F Enabled	LatAcc		10 Hz	-	ateral acceleron	neter	9.01	-1	.00	3.00		
bernee Sampranon	LOG_TMP	Enabled	Datalogger_Tem		10 Hz	-	Cold joint		*C	- 0		50		
	BATT	F. Enabled	Battery		1 Hz	-1	Battery		V 1	5	0	15.0		
Customiza Sanso:	ECU_1	F Enabled	KTM_RPM		10 Hz	-	ingine speed ser	nsor	rpm	0		10000		
Contounte Sennot	ECU_2	F Enabled	KTM_WH_SPD_FL		10 Hz	-	ipeed sensor		km/h 1	- 0	0	300.0		
	ECU_3	P Enabled	KTM_WH_SPD_FR		10 Hz	-	speed sensor		km/h 1	- 0.	0	300.0		
1	ECU_4	F Enabled	KTM_WH_SPD_RL		10 Hz		peed sensor		km/h 1		0	300.0		
Language	ECU_S	Frabled	KTM_WH_SPD_RR		10 Hz	-1	ipeed sensor		km/h 1	-1 0.	0	300.0		
	ECU_6	F Enabled	KTM_PPS1		10 Hz		hrottle position	sensor	% J	0.	0	105.0		
			1.000 C. 000 C.		· · · ·	۴.				· · ·				
	Channel Name	Sensor t	vpe Meas	ure unit										
aim-sportline.com	Channel_3 Parameters	Distance poter	ntometer m	m .1										

• Press "Device calibration"

	System manager											
COURSE Frank	Transm	- 5	Receive	CAN-Net info	SmartyCam settiz	functions	Set acquisition system time]				Total and for
AIM Sportline	Current configuration											
Vorid Leader in Data Acquisition	Installation name	Data logger type	Ecu Lap	Timer	Vehicle name A	valiable time	Time with GPS	Total frequence	y Maste	er frequency	Expansions frequency	Tot. Expansions
	LOGGER_CONF	MXL PISTA	KTM - X-BOW by C	GPS	READ	1.42.47 (h.m.s)	2.27.06 (h.m.s)	311 (Hz)	311 ()	Hz)	9 (HZ)	0
Download Data	Speed_1 Wheel circumference	(mm) 1666	Jason CAN-opensons compute	tor								
Langed Provide Com	Pulses per wheel revo	Aution 1										
microSD Data	Channel identifier	Enabled/disabled	Channel name		Sampling frequenc	Sensor type			Measure unit	Low sca	ele High s	cale
microSD Data	Channel identifier RPM	Enabled/disabled	Channel name Engine		Sampling frequenc	Sensor type	ution speed		Measure unit	Low sca	ele High s 20000	icale
microSD Data	Channel identifier RPM SPD_1	Enabled/disabled	Channel name Engine Speed_1		Sampling frequence 10 Hz 10 Hz	Sensor type Engine revolu Speed	ution speed	-	Measure unit rpm km/h 1	Low sca 0 0.0	ele High s 20000 250.0	cale
Device Configuration	Channel identifier RPM SPD_1 CH_1	Enabled/disabled	Channel name Engine Speed_1 Channel_1		Sampling frequenc 10 Hz 10 Hz 10 Hz	Sensor type Engine revolu Speed Generic linear	r 0-5 V		Measure unit rpm km/h 1 V 1	Low sca 0 1 0.0 1 0.0	ale High s 20000 250.0 5.0	icale
microSD Data	Channel identifier RPM SPD_1 CH_1 CH_2 CH_2	Enabled/disabled Disabled	Channel name Engine Speed 1 Channel 1 Channel 2 Channel 2		Sampling frequence 10 Hz 10 Hz 10 Hz 10 Hz	Sensor type Engine revolu Speed Generic linear Generic linear	r0-5 V r0-5 V	- - -	Measure unit rpm km/h 1 V 1 V 1	Low sca 0 1 0.0 1 0.0 1 0.0 1 0.0	ale High s 20000 250.0 5.0 5.0	icale
Device Configuration	Channel identifier RPM SPD_1 CH_1 CH_2 CH_2 CH_4	Enabled/disabled Disabled Disabled Enabled	Channel name Engine Speed 1 Channel 1 Channel 2 Channel 3 Channel 4		Sampling frequence 10 Hz 10 Hz 10 Hz 10 Hz 10 Hz 10 Hz	Sensor type Engine revolu Speed Generic linear Generic linear Distance pote	r0-5 V r0-5 V entiometer		Measure unit rpm km/h 1 V 1 V 1 mm 1	Low sca 0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0	ele High 5 20000 250.0 5.0 5.0 5.0 5.0	icale
Device Configuration	Channel identifier RPM SP0_1 CH_1 CH_2 CH_2 CH_4 CH_4 CH_5	Enabled/disabled Disabled Enabled Enabled	Channel name Engine Speed_1 Channel_1 Channel_2 Channel_3 Channel_5		Sampling frequence 10 Hz	Sensor type Engine revolu Speed Generic linear Generic linear Distance pote Generic linear	ution speed r0-5 V r0-5 V entiometer r0-5 V r0-5 V		Measure unit rpm km/h 1 V 1 V 1 Mm 1 V 1	Low sca 0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0	ale High s 2000 250.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	icale
Device Configuration	Channel identifier RPM SP0_1 CH_1 CH_2 CH_2 CH_4 CH_4 CH_5 CH_6	Enabled/disabled	Channel name Engine Speed,1 Channel,1 Channel,2 Channel,2 Channel,4 Channel,6 Channel,6		Sampling frequence 10 Hz	Sensor type T Engine revolu T Speed Generic linear C Generic linear Distance pote Generic linear Generic linear Generic linear	r0-5 V r0-5 V entiometer r0-5 V r0-5 V r0-5 V		Measure unit rpm km/h 1 V 1 V 1 V 1 V 1 V 1 V 1 V 1	Low sea 0 1 0.0 1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ele High s 20000 250.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	kale
Device Info	Channel identifier RPM SP0.1 CH.1 CH.2 CH.2 CH.4 CH.5 CH.5 CH.5 CH.2	Enabled/disabled Disabled Enabled Enabled Enabled Enabled Enabled Enabled Enabled Ena	Channel name Engine Speed J. Channel J. Channel J. Channel J. Channel J. Channel J. Channel J. Channel J. Channel J.		Sampling frequence 10 Hz 10 Hz 10 Hz 10 Hz 10 Hz 10 Hz 10 Hz 10 Hz 10 Hz	Sensor type Lengine revolu Speed Generic linear Jostance pote Generic linear Generic linear Generic linear Generic linear Generic linear	rtion speed r0-5 V r0-5 V r0-5 V r0-5 V r0-5 V r0-5 V r0-5 V r0-5 V	- - - - - - -	Measure unit rpm km/h 1 V 1 i v 1 V 1 V 1 V 1 V 1 V 1 V 1 V 1 V	Low sca 0 1 0.0 1 0.0 1 0.0 1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ale High s 20000 250.0 50 50 50 50 50 50 50 50 50 50	cale
Device Configuration Device Info Qulline	Channel identifier RPM SP0_1 CH_1 CH_2 CH_2 CH_2 CH_4 CH_5 CH_6 CH_6 CH_7 CH_8	Enabled/disabled	Channel name Engine Speed_1 Channel_2 Channel_2 Channel_4 Channel_5 Channel_5 Channel_6 Channel_7		Sampling frequence 10 Hz 10 Hz	Sensor type Engine revolu Speed Generic linear	ntion speed r0-5 V r0-5 V ntionneter r0-5 V r0-5 V r0-5 V r0-5 V r0-5 V r0-5 V		Measure unit rpm km/h 1 V 1 V 1 V 1 V 1 V 1 V 1 V 1 V	Low sca 0 1 0.0 1 0.0 1 0.0 1 0.0 0 0.0 1 0.	ale High s 20000 250.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	scale
Device Configuration Device Info Quline	Channel identifier RPM SPD_1 CH_3 CH_2 CH_2 CH_4 CH_5 CH_6 CH_6 CH_7 CH_8 CAL6 GEAR	Enabled/disabled	Channel name Engine Speed_1 Channel_2 Channel_2 Channel_3 Channel_6 Channel_6 Channel_6 Channel_6 Channel_7 Channel_6		Sampling frequence 10 Hz 10 Hz	Sensor type Ingine revolu Speed Generic linear	ntion speed r0-5 V r0-5 V settlameter r0-5 V r0-5 V r0-5 V r0-5 V r0-5 V r0-5 V	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Measure unit rpm km/h 1 V 1 V 1 V 1 V 1 V 3 V 3 V 3 V 3 V 3 V 3 V 3 V 3	Low sca 0 1 0.0 1 0.0	ale High s 20000 2500 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	scale
Device Configuration Device Info Quline	Channel identifier RPM SPD_1 CH_2 CH_2 CH_2 CH_4 CH_5 CH_6 CH_6 CH_7 CH_8 CH_7 CH_8 CALCGEAR CALCGEAR	Enabled/disabled Disabled Disabled For Disabled For Enabled For Enabled For Enabled For Enabled For Ena	Channel name Engine Speed, 1 Channel, 2 Channel, 3 Channel, 4 Channel, 6 Channel, 6 Channel, 7 Channel, 7 Channel, 7 Channel, 8 Channel, 8 Chan		Sampling frequence 10 Hz	Sensor type Ingine revolu Speed Generic linear	dion speed r0-5 V r0-5 V r0	* * * * *	Measure unit rpm km/h 1 V 1 V 1 V 1 V 1 V 3 V 3 V 3 V 3 V 3 V 3 V 3 V 3	Low sca 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	ale High s 2000 2500 50 50 50 50 50 50 50 50 50 50 50 50	cale
Device Configuration Device Info Quiline Device Calibration	Channel identifier RPM SP0.1 CH.2 CH.2 CH.2 CH.5 CH.6 CH.5 CH.6 CH.6 CH.6 CH.6 CH.7 CH.8 CH.6 CH.8	Enabled/disabled Fibiabled disabled Fibiab	Channel name Engine Speed J Channel		Sampling frequence 10 Hz 10	Sensor type Engine revolu Speed Generic linear Generic linear Distance pote Generic linear Gen	dion speed r0-5 V r0-5 V r0	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Measure unit rpm km/h 1 V 1 V 1 V 1 V 1 V 1 V 1 V 1 V	Low sca 0 1 0.0 1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ale High s 20000 250.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	cale



Calibration panel shows up:

• Press "Calibrate" button of distance potentiometer



Once the calibration over potentiometer status will be red and turn to "Calibrated":

• Transmit the calibration to the logger pressing "Transmit Calibration"

le Device Configuration Download D	ata Import SmartuCan	n Data Analysis De	iceInfo Online Devis	ce Calibration Custo	enize Sensor La	iguage 2			_				and a set in the	
	System manager												010	
	Trans	unit	Receive	CAN-Ne	t info	SmartyCam Functions setting	0	Set acquisition system time						
AIM Sportline	Current configuration													
e World Leader in Data Acquisition	Installation name	Data logger type	Ecu	Lap Timer	Vehicle na	me Available time		Time with GPS	Total frequency	Master f	requency	Expansions frequency	Tot. Expansions	
	LOGGER_CONF	MXL PISTA	KTM - X-BOW	by OPS	READ	3.42.47 (h.m.	6)	2.27.06 (h.m.s)	311 (Hz)	311 (Hz)		0 (Hz)	0	
C Analysis														
Allarysis	Select configuration Onamete System configuration (CAV-Bipersioni configurator)													
	Speed_1		Sensor calibration						1 States					
Download Data	Wheel croumference	e (mm) 1666					÷.							
gowinoad bata			-	Configuration name			Syste	en type						
	Puses per wheel rev	volution +		LOGGER_CONF			MAL	PISTA						
Import SmartyCam microSD Data	Channel identifier	Enabled/dirabled	Sensors to autocalibrat	te			1			tion encode	toward	e Hinh s	ale	
	POM	Disabled						Click here to autocalibrat sensors in the list	o all m	easure unit	0	20000	ere	
	SPD 1	Finabled				1.000			-1 kr	n/h .1	-100	250.0		
Device Configuration	CH 1	Finabled	Channel	name	Sensor type	Status		ck here to calibrate	-1 V	1	-100	5.0		
	CH 2	Enabled	Channel 3	Dista	nce potentiometer	Calibrated		Calibrate	-1 v	1	-100	5.0		
	CH 3	Enabled	CROACE	Cater	al acceleronneter	Contractor	-	Calibrate	- 1 - 1 - 1 - 1 - 1 - 1	m 1	-100	50		
Device Info	CH 4	Enabled							-1 v	1	- 0.0	5.0		
Conce mio	CHS	Finabled							-1 V	1	- 0.0	5.0		
	CH 6	Frabled	Concern to calibrate						-1 v	1	-10.0	5.0		
Online	CH.7	F Enabled					1.00		- V	1	-100	5.0		
2 Zuillie	CH.8	F Enabled	Channel	name	Sensor type	Status	Cli	ck here to calibrate	-1 v	1	-10.0	5.0		
	CALC_GEAR	☐ Disabled									0	9		
Device Calibration	ACC 1	P Enabled							g	.01	-3.00	3.00		
Conce Zaumanou	LOG_TMP	Enabled							10		. 0	50		
	BATT	Enabled							V	1	5.0	15.0		
Customize Sensor	ECU_1	F Enabled							rp	m	0	10000		
Contounte Jeurol	ECU_2	Frabled							kr	n/h .1	· 0.0	300.0		
	ECU_3	F Enabled			/ Transmit calibra	ton N	Cance		kn	n/h .1	- 0.0	300.0		
Language 1	ECU_4	F Enabled							kr	n/h .1	±1 0.0	300.0		
Language	ECU S	F Enabled	KTM WH SPD RF	R	10	Hz Speed	ensor		kn	n/h .1	. 0.0	300.0		