

BC-GPS2CAN_3A3G-000

GPS2CAN-2A3G

Key Features:

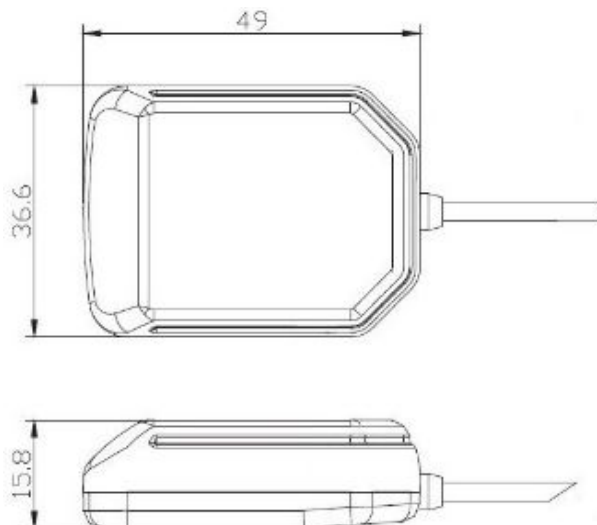
- Automatic lap time calculation for more than 300 race tracks
- Integrated magnet allows simple assembly on all magnetic surfaces
- 6 axes inertia sensor with optimized axes alignment
- Individual range selection for accelerometers ($\pm 2/4/8/16G$) and gyros ($\pm 250/500/1000/2000^\circ/s$)
- Fully programmable CAN Interface(Baudrate/CAN Identifiers)
- Built-in coordinate transformation for non-orthogonal mounting compensation
- Programmable phase corrected sensor filters for all axes
- Additional IIR filter for individual adjustment for all axes
- USER programmable channels for additional online mathematical calculations
- Internal calibration and physical unit calculation



Technical specifications

Electrical characteristics			Mechanical characteristics		
Power supply	V	5-16	Dimensions	mm ³	37x49.5x16.2
Max consumption @5 V			Weight	g	65
Searching for GPS	mA	85	Housing material		PVC
GPS signal found	mA	80	Cable		
			Type		Raychem
			Wire cross section		5x AWG26
			Length	mm	400
			Connector		Binder 712, 5PM
3 axis acceleration			Environmental		
Range switchable with 3 axis	g	$\pm 2, \pm 4, \pm 8, \pm 16$	Operating temperature	°C	-40 to +85
Error of linearity	% FS	<1	Humidity	%	5 to 95
Low-pass filter response (programmable)	Hz	5-250	Sealing class		IP67
Gyro sensor			Ordering information		
Sensitivity	°/s	250, 500, 1000, 2000	BC-GPS2CAN_3A3G-000		
Error for linearity	% FS	<1			
Low-pass filter response (programmable)	Hz	5-250			

Technical drawing



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CAN identifiers (default)

CAN-ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
0x498	ACC_X		ACC_Y		ACC_Z		ACC_N	
0x499	Gyro_X		Gyro_Y		Gyro_Z		Vext	
0x000	MAGN_X		MAGN_Y		MAGN_Z		V_Dout	
0x000	ACC_X_IIR		ACC_Y_IIR		ACC_Z_IIR		ACC_N_IIR	
0x000	Gyro_X_IIR		Gyro_Y_IIR		Gyro_Z_IIR		TEMP_GYRO	
0x000	ACC_X_ROT		ACC_Y_ROT		ACC_Z_ROT		ACC_N_ROT	
0x000	Gyro_X_ROT		Gyro_Y_ROT		Gyro_Z_ROT		TEMP_ROT	
0x790	V_Sat		ValidSat		HHMM		Course	
0x791	Lat dez				Lon dez			
0x792	Altitude				MMDD		SSHH	
0x000	HorAccu		VerAccu		SpAccu		CourAccu	
0x000	Speed_N		Speed_E		Speed_D		Speed_3D	
0x000	HDOP		GDOP		PDOP		VDOP	
0x000	Year	Month	Day	Hour	Minute	Second	hSec	n.u.
0x000	Latitude				Longitude			
0x000	A_Lat		A_Lon		Banking		Yawrate	
0x000	COUNT#39		CPU_Load					

Formulas to calculate physical values

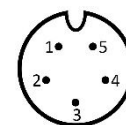
Description	CAN-ID	Channel		Formula	Offset	Dimension
Speed over ground (2 dimensional)	0x790	V_Sat	=	0.01*digits	+0	[km/h]
Validity & number of satellites & horizontal dilution of precision	0x790	ValidSat	=	0.0001*digits	+0	
Hour/minutes	0x790	HHMM	=	0.01*digits	+0	
Vehicle course (=direction)	0x790	Course	=	0.01*digits	+0	
Latitude(decimal)	0x791	Lat dez	=	0.0000001*digits	+0	[deg]
Longitude(decimal)	0x791	Lon dez	=	0.0000001*digits	+0	[deg]
Altitude	0x792	Altitude	=	0.01*digits	+0	[m]
Month/Day	0x792	MMDD	=	0.01*digits	+0	
Seconds/hundreds of seconds	0x792	SSHH	=	0.01*digits	+0	
Horizontal accuracy	0x000	HorAccu	=	0.001*digits	+0	[m]
Vertical accuracy	0x000	VerAccu	=	0.001*digits	+0	[m]
Speed accuracy	0x000	SpAccu	=	0.036*digits	+0	[km/h]
Course accuracy	0x000	CourAccu	=	0.01*digits	+0	[°]
North velocity(speed north-south)	0x000	Speed_N	=	0.036*digits	-1179.6121	[km/h]
East velocity(speed east-west)	0x000	Speed_E	=	0.036*digits	-1179.6121	[km/h]
Down velocity (speed down-up)	0x000	Speed_D	=	0.036*digits	-1179.6121	[km/h]
Geometrical speed(3 dimensional)	0x000	Speed_3D	=	0.036*digits	+0	[km/h]
Horizontal dilution of precision	0x000	HDOP	=	0.01*digits	+0	
Geometric dilution of precision	0x000	GDOP	=	0.01*digits	+0	
Position dilution of precision	0x000	PDOP	=	0.01*digits	+0	
Vertical dilution of precision	0x000	VDOP	=	0.01*digits	+0	
Year	0x000	Year	=	1.0*digits	+2000	
Month	0x000	Month	=	1.0*digits	+0	
Day	0x000	Day	=	1.0*digits	+0	
Hour	0x000	Hour	=	1.0*digits	+0	
Minute	0x000	Minute	=	1.0*digits	+0	
Second	0x000	Second	=	0.25*digits	+0	
Hundreds of seconds	0x000	hSec	=	1.0*digits	+0	
Latitude(degree)	0x000	Latitude	=	0.0000001*digits	+0	[°]
Longitude(degree)	0x000	Longitude	=	0.0000001*digits	+0	[°]
Acceleration Latitude	0x000	A_Lat	=	0.0010*digits	-32.767	[m/s ²]
Acceleration Longitude	0x000	A_Lon	=	0.0028*digits	-91.0194	[m/s ²]
Declination of vehicle	0x000	Banking	=	0.1*digits	-3276.7	[°]
Yaw rate of vehicle	0x000	Yawrate	=	0.01*digits	-327.67	[°/s]

Connector layout

Connector type

Binder 712 5PM

Pin	Name	Description	Color
1	CAN hi	CAN Bus high	white
2	CAN lo	CAN Bus low	green
3	GND	Ground	black
4	Button/Lap	Push-button input/lap output (open collector)	yellow
5	Vext	Power supply	red



front view