



# Analog to CAN Digitizing $\mu$ Module for 8 Analog Signals + 2 Digital Inputs

Model: A-CAN-DG-V2 (spec v1.5)

Analog Inputs	Range	0-5 or $\pm 10^{(1)}$	Volts
	16 bits Resolution	0.076 or 0.305	mV/bit
	Pull-up	internal	
	Accuracy	0.5 (-40 / 110°C)	% FS
		2 (110 / 125°C)	% FS
	Max input impedance	10	k $\Omega$
Anti-Aliasing Filter (optional) <sup>(2)</sup>	type	Low pass, Linear phase 5th-Order	
	Cut of frequency	Programmable from 15 to 250Hz	
	<sup>(1)</sup> For $\pm 10V$ input range, filter option is not available. <sup>(2)</sup> If filter option is used: → the speed inputs are disabled. → pin 11 and 12 must not be connected. → frame Tx3 not sent.		
Digital Inputs <sup>(2)</sup>	Square wave Level	0 to 5 or NPN open Collector	V
	Pull up to 5V	1	M $\Omega$
	Freq. max <sup>(3)</sup>	8	KHz
	Tops	1 to 100	Tops/rev
	<sup>(3)</sup> Check max frequency for digital inputs as below: Ex1: 8000rpm with 48 tops/rev → 8000/60x48 = 6.4KHz. Ex2: 360km/h with 2m wheel circumference and 100 tops/rev → 360/3.6 / 2 x 100 = 5 KHz.		
Wheel Speed <sup>(2)</sup>	Range	0 to 500	km/h
		0 to 500	mph
	Circumference	300 to 5000	rev. (mm)
	Wheel tops/rev.	1 to 100	Top/rev
	Resolution	0.01	kmh/bit
		0.01	mph/bit
Engine Revs	Range	0 to 20000	rpm
	Engine tops/rev.	1 to 100	Top/rev
	Resolution	1	rpm/bit
Analog sampling and speed calculation (per channel)		500	Hz
Sensor supply Output		Protected supply 6 to 16V (0.5A max) 5V 100mA @85°C	
CAN bus2.0 A or B		120 $\Omega$ : <input type="checkbox"/> yes <input type="checkbox"/> no	
Baud rate		125k to 1Mbps	
Parameters		identifiers, baudrate, frequency, digital and analog inputs parameters.	
Output Frequency		1Hz to 500Hz, setup on request.	
Output Data		16 bits per channel	
Output format		16bits or mV	
Supply Voltage		6 to 16	V
Typical Supply Current		35	mA
Dimensions		48x30x33	mm
Material		Aluminum	
Weight		45	g
Protection		IP67	
Vibration test		20Gpp 5'	
Operating Temp		-40 to +125	°C
Storage Temp		-40 to +125	°C

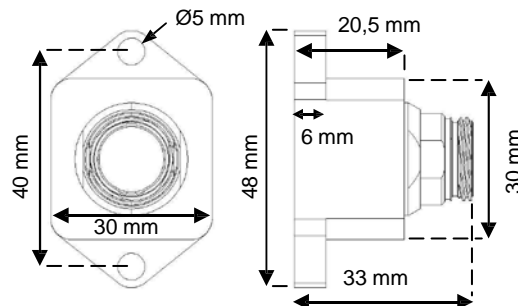
Setup parameters			
CAN	2.0A	2.0B	-
Baudrate			bps
Frequency			Hz
Rx trig ID			Hex
Tx1 ID			Hex
Tx2 ID			Hex
Tx3 ID <sup>(2)</sup>			Hex
Output format	16bits	mV	-
Cut off frequency <sup>(1)</sup>			Hz
Speed Unit <sup>(2)</sup>	km/h	mph	-
Wheel circumference <sup>(2)</sup>			mm
Wheel tops / rev <sup>(2)</sup>			pulses / rev
Engine tops/rev <sup>(2)</sup>			pulses / rev

Function / Color	Description	Pin
Supply	Supply (6 to 16 V)	1
	GND*	2
Analog Inputs	Channel 1	3
	Channel 2	4
	Channel 3	5
	Channel 4	6
	Channel 5	7
	Channel 6	8
	Channel 7	9
	Channel 8	10
Digital Inputs	Wheel Speed	11
	Engine Speed	12
CAN	CAN HIGH	13
	CAN LOW	14
Manufacturer reserved	do not connect	15
Sensor supply	Protected supply 6 to 16V (0.5A max)	16
	5V	17
	GND*	18
	GND*	19

\* All channels & power supply share the same Ground

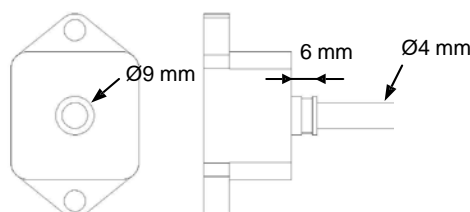
### Standard version:

Connector: LEMO HES.2M.319.XLDP  
Mating connector: LEMO FGS.2M.319.XLM



### Cable option:

Cable: 19 AWG 28 RW-200-E-3/16



Data output:

ID	Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
#1 0x03F0	ANA 1		ANA 2		ANA 3		ANA 4	
#2 0x03F4	ANA 5		ANA 6		ANA 7		ANA 8	
#3 0x03F8	Wheel speed		Engine Revs		-		-	

## Changing parameters

The device parameters can be modified using the CAN protocol Texsys.

CAN parameters:

N°	Parameter	Raw values	values	Comments	
0x00	Baudrate & A or B (11 or 29bits ID)	0x00	CAN2.0A 1Mbps	default	
		0x01	CAN2.0A 500 Kbps		
		0x02	CAN2.0A 250 Kbps		
		0x03	CAN2.0A 125 Kbps		
		0x10	CAN2.0B 1Mbps		
		0x11	CAN2.0B 500 Kbps		
		0x12	CAN2.0B 250 Kbps		
		0x13	CAN2.0B 125 Kbps		
0x01	Emission frequency	0x00	Rx frame trig	Request mode - 100Hz max.	
		0x01	1 Hz	default	
		0x02	5 Hz		
		0x03	10 Hz		
		0x04	50 Hz		Only with baudrate 1Mbps
		0x05	100 Hz		
		0x06	200 Hz		
		0x07	500 Hz		
0x02	Rx frame ID	if CAN2.0A: 0 to 0x7F0		MSB	Default 0x07F0
0x03		if CAN2.0B: 0 to 0xFFFF		LSB	
0x04	Tx1 frame ID	if CAN2.0A: 0 to 0x7F0		MSB	Default 0x03F0
0x05		if CAN2.0B: 0 to 0xFFFF		LSB	
0x06	Tx2 frame ID	if CAN2.0A: 0 to 0x7F0		MSB	Default 0x03F4
0x07		if CAN2.0B: 0 to 0xFFFF		LSB	
0x08	Tx3 frame ID	if CAN2.0A: 0 to 0x7F0		MSB	Default 0x03F8
0x09		if CAN2.0B: 0 to 0xFFFF		LSB	

Digital Input parameters <sup>(2)</sup>:

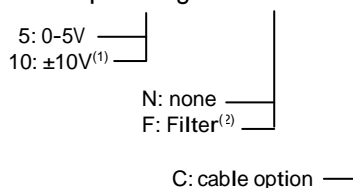
0x0A	Speed Unit	0	0.01 mph/bit	Default 1	
		1	0.01 kmh/bit		
0x0B	Wheel circumference	300 to 5000	mm	MSB	Default 2000
0x0C				LSB	
0x0D	Wheel tops / rev	1 to 100		Default 1	
0x0E	Engine tops / rev	1 to 100		1	

Analog Input parameters:

0x0F	Output format	0	16bits	Default 1
		1	mV	
0x10	cut off frequency <sup>(1)</sup>	15 to 250	Hz	Default 250

## Ordering reference

A-CAN-DG-V2 – input range – AA filter – option



Ex: A-CAN-DG-V2-5-N → 0-5V, no filter.

<sup>(1)</sup> For ±10V input range, AA filter option is not available.

<sup>(2)</sup> If filter option is used:

- the speed inputs are disabled.
- pin 11 and 12 must not be connected.
- frame Tx3 not sent.

For complete information, contact us at [info@axilane.com](mailto:info@axilane.com)