CAN Output Specification - Overview

The MAS-360 series sensor utilises a communications interface in accordance with the SAE J1939 standard. It utilises the standard defined PGN SSI2 (0xF029) for angle data, and proprietary vendor specific PGN PropB_AA (0xFFAA) to control and configure the device.

Interface	
CAN Specification	ISO 11898, Basic and Full CAN 2.0 B
Transceiver	24V-compliant, not isolated
Communication profile	SAE J1939
Bit rate	250Kbps (500Kbps optional in settings)
Termination Resistor	None (factory fit option)
Address	129 (factory configurable)

Name Field		
Arbitrary address capable	1	Yes
Industry Group	0	Global
Vehicle System	127	Non specific
System Instance	0	
Function	255	Unspecified
Function Instance	0	
ECU Instance	0	
Manufacturer	664	Manufacturer ID
Identity Number	nnn	Manufacturers Serial Number

PGN's	
Sensor Data	PGN 61481 (0xF029) - SSI2 - default transmission rate 100ms
Sensor Configuration	PGN 65450 (0xFFAA) - PropB_AA - polled

PGN 61481 (F029h) - Slope Sensor Information 2 (SSI2)

The standard SSI2 PGN is defined below. This is transmitted in 100ms intervals by default.

SPN	SPN Name	Function	Data Range	Resolution	Offset	Bit Start	Bit Length	Default (After Scaling)	Units (After Scaling)
	Pitch Angle	Outputs the single axis tilt angle from the sensor	-250 to 250deg	3.0517578 E-05 deg/lsb	-250	0	24	-	degrees
	Roll Angle	Not Implemented	-250 to 250deg	3.0517578 E-05 deg/lsb	-250	24	24	-250	degrees
	Pitch Angle Compensation	Two bits to indicate pitch angle compensation 0 = Compensation off 1 = Compensation on 2 = Error 3 = Not Available	0 to 3	4 states/2 bit	0	48	2	3	-
	Pitch Angle Figure of Merit	Two bits to indicate fault condition 0 = Fully functional 1 = Reading degraded 2 =Out of range error 3 = Not available	0 to 3	4 states/2 bit	0	50	2	0	-
	Roll Angle Compensation	Two bits to indicate roll angle compensation 0 = Compensation off 1 = Compensation on 2 = Error 3 = Not Available	0 to 3	4 states/2 bit	0	52	2	3	-
	Roll Angle Figure of Merit	Two bits to indicate fault condition 0 = Fully functional 1 = Reading degraded 2 =Out of range error 3 = Not available	0 to 3	4 states/2 bit	0	54	2	3	-
	Roll and Pitch Latency	Latency between sensor measurement and queuing of the data for CAN transmission	0 to 125ms	0.5ms/lsb	0	56	8	5	ms

PGN 65450 (FFAAh) - Vendor Specific PGN PropB_AA

The vendor specific PGN PropB_AA is used to control and configure the device as defined below. This PGN is only transmitted on request.

SPN	SPN Name	Function	Data Range	Resolution	Offset	Bit Start	Bit Length	Default (After Scaling)	Units (After Scaling)
	Un-used	None	-	-	-	0	16	-	-
	Polled / Continuous	Determines if PGN SSI2 is transmitted continuously, or only when polled 1 = Continuous 0 = Polled	0 to 1	2 states / 1 bit	0	16	1	0	-
	Baud Rate	Bit for setting CAN transmission rate 0 = 250Kbit/s 1 = 500Kbits/s	0 to 1	2 states / 1 bit	0	17	1	0 (250)	- (Kbps)
	Un-used	None	-	-	-	18	6	-	-
	Transmit Rate	Four bits to indicate transmit period 0 = 10ms 1 = 20ms 2 = 30ms 3 = 40ms 4 = 50ms 5 = 75ms 6 = 100ms 7 = 200ms 8 = 250ms 9 = 500ms 10 = 750ms 11 = 1000ms 12 = 2000ms 13 = 5000ms 14 = Error 15 = Not Available	0 to 15	16 states / 4 bit	0	24	4	6 (100ms)	- (ms)

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PGN 65450 (FFAAh) - Vendor Specific PGN PropB_AA - (Continued)

SPN	SPN Name	Function	Data Range	Resolution	Offset	Bit Start	Bit Length	Default (After Scaling)	Units (After Scaling)
	Un-used	None	-	-	-	28	4	-	-
	Temperature	Temperature data from on-board temperature sensor	-273 to 273°C	0.03125°C / lsb	-273	32	16	-	°C
	Filter Frequency	Adjustable 2nd order digital filter 0 = 0.1Hz 1 = 0.2Hz 2 = 0.3Hz 3 = 0.4Hz 4 = 0.5Hz 5 = 1Hz 6 = 2Hz 7 = 3Hz 8 = 4Hz 9 = 5Hz 10 = 7Hz 11 = 10Hz 12 = 15Hz 13 = 20Hz 14 = 25Hz 15 = 30Hz 16 = 40Hz 17-255 = Not implemented	0 to 16	17 states / 8 bits	0	48	8	5 (1)	- (Hz)
	Un-used	None	-	-	-	56	8	-	-