MACH SYSTEMS

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SAE J2716 (SENT) to RS-232/CAN Gateway

A low-cost gateway between two SAE J2716 (SENT) channels and a RS-232/CAN bus. The device features two bi-directional SENT channels and either RS-232 or CAN bus interface. Fast, Short Serial, and Enhanced Serial message formats are supported. The user can configure channel parameters (direction, tick time, nibble count, filtration) and store the configuration into the device's non-volatile memory. Each SENT channel can be configured independently to suit all possible use cases: 2x RX channels / 1x RX and 1x TX channel / 2x TX channels.

An intelligent filtration of incoming SENT frames has been introduced so that RS-232 or CAN communication does not get overloaded. The CAN variant offers configurable CAN Identifiers for both TX and RX which allows multiple devices to be used simultaneously on the same CAN bus. The device's firmware is upgradable from PC.

A PC application for configuring the device and for monitoring, logging and simulation of SENT communication is available for free. The device provides a simple binary protocol over RS-232/CAN so that the user can easily integrate the device into an existing system, such as test benches and HiL rigs. The protocol allows the user to configure the device's channels and to transmit and receive SENT Fast and Slow messages.

FEATURES

- Two independent SAE J2716 (SENT) channels
- Gateway to RS-232 or CAN bus
- Each channel configurable as TX/RX
- Supports Fast, Short Serial, and Enhanced Serial messages
- Supports SPC mode
- Configurable SENT parameters
- On-board non-volatile memory
- Intelligent message filtration
- Free PC application for configuration, reception, transmission and logging
- Simple binary protocol for integration into existing systems
- Device's firmware upgradable from PC
- Table or DIN-rail mount
- Hardware and firmware customization on request

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TECHNICAL SPECIFICATION

SENT

Channels	2x bi-directional SENT channel *(each channel can be configured as RX or TX)*
Specification	SAE J2716 (2016), Pause Pulse Support, SPC Mode Support
Tick Time	3 - 90 us
Data Nibbles	1 - 6
Message Format	Fast, Short Serial, Enhanced Serial
RX Message Filtration	No filtration, On change, Skip frames

GENERAL

Configuration	Non-volatile memory for storing configuration of SENT channels and communication parameters
PC application	Free-of-charge PC application (Windows) for device configuration, reception and transmission of SENT Fast/Slow frames
Firmware	Upgradable from PC
Microcontroller	16-bit DSP

RS-232 / CAN COMMUNICATION

Protocol	Simple binary protocol for easy integration
RS-232 variant	115200, 8N1
CAN variant	Configurable Parameters: 1) Baud Rate, Sample Point 2) RX/TX CAN Identifiers *This allows multiple devices on the same bus*

ELECTRICAL AND MECHANICAL

Power	9 - 30 V DC (polarity protection), 5 V DC output for sensors (limited to 200 mA)
Consumption	50mA @ 12 V (5V output not considered)
LEDs	3x Status Indicator, 1x Power
Button	1x Tactile switch (reset factory defaults)
Connectors	1x D-SUB9 F, 1x Terminal Block 8-pin, 3.5 mm pitch
Dimensions (L x W x H)	108 x 54 x 30 mm
Weight	80 g
Operating Temperature	-20 to 60 °C
Protection	IP40
Placement	Table (adhesive pads included), DIN-rail mount (clip sold separately)

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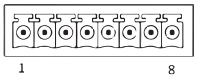
PIN ASSIGNMENT

Device can be powered via Connector 1-pin 8+9 (both variants). CAN variant can also be powered via Connector 2-pin 9+3. All GND pins are connected throughout the device. Hence, there is no galvanic isolation.

CONNECTOR 1 - SENT AND POWER

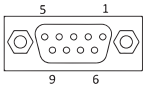
PIN	FUNCTION	NOTE
1	SENT 1 RX	input
2	SENT 1 TX	output
3	SENT 2 RX	input
4	SENT 2 TX	output
5	GND	connected to DSUB9 pin 5
6	5V output	200mA protection
7	GND (Power In-)	connected to pin 5
8	Vin1 (Power In+)	



Front view

CONNECTOR 2 - COMMUNICATION

PIN	RS-232 VARIANT	CAN VARIANT
1		
2	TxD (output)	CAN_L
3	RxD (input)	GND (Power In-)
4		
5	GND	GND (connected to pin 3)
6		
7		CAN_H
8		
9		Vin2 (Power In+)



Front view

ORDERING INFORMATION

PRODUCT NUMBER	DESCRIPTION
SENT-RS232	RS-232 variant
SENT-CAN	CAN bus variant
SENT-DIN-CLIP	Clip for mounting on a DIN rail