

ECU simulation node based on SENT and PSI5 protocols



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Feature Overview

The TC4016 is an ECU (Electronic Control Unit) simulation node designed to receive sensor signals based on the SENT (Single Edge Nibble Transmission) and PSI5 (Peripheral Sensor Interface 5) protocols.

It does not generate or simulate SENT/PSI5 signals, but it can acquire and process incoming sensor data from various SENT and PSI5 devices.

The TC4016 integrates 2 channels of CAN/CAN FD, 4 channels of Digital Input/Output (DIDO), and 3 channels of Analog Input/Output (AIAO).

When connected to a PC via Ethernet, the TC4016 enables real-time monitoring, analysis, and CAN/CAN FD simulation, providing a reliable data environment for R&D and testing. This significantly accelerates ECU development cycles.

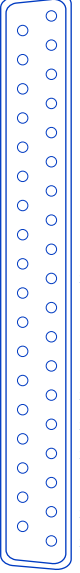


Channel	2 x CAN/ CAN FD / 4 x DDO / 16 x PSI5 3 x AIAO / 20 x SENT (the first 10 channels supporting SPC mode)
Driver	Driver- free for Windows
Terminal Resistor	1μs, hardware message timestamp
DDO	Digital Input (DI) voltage range: 0 ~ 39.5 V DI threshold adjustable via built-in hysteresis comparator and configurable Vref (0 ~ 3.28 V) DI Threshold Calculations: High-level threshold (VAH): $(330 + 499 \times V_{ref}) / 1098$ Low-level threshold (VAL): $0.455 \times V_{ref}$ Digital Output (DO) levels: Low = 0 V, High = 5 V or 12 V (DO does not support direct load driving)
SENT	Idle polarity: High Tick time range: 3 ~ 50 μs Nibble count: 0 ~ 8 Data types supported: Fast Channel and Slow Channel
Power Supply	DC 9 ~ 32 V
Case Material	Aluminum alloy enclosure
Weight	Net weight: approx. 150 g ; Gross weight: approx. 368 g
Operating Humidity	10% ~ 90% (non- condensing)

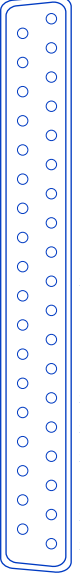
Ordering information

Network Device	TC4016	ECU simulation node based on SENT and PSI5 protocolsPIN Number

• SENT 1/10

	PIN 1	SENT 1	PIN 2	GND	PIN 3	VCC_5 V
	PIN 4	SENT 3	PIN 5	GND	PIN 6	VCC_5 V
	PIN 7	SENT 5	PIN 8	GND	PIN 9	VCC_5 V
	PIN 10	SENT 7	PIN 11	GND	PIN 12	VCC_5 V
	PIN 13	SENT 9	PIN 14	GND	PIN 15	VCC_5 V
	PIN 16	NULL	PIN 17	NULL	PIN 18	NULL
	PIN 19	NULL	PIN 20	VCC_5 V	PIN 21	SENT 2
	PIN 22	GND	PIN 23	VCC_5 V	PIN 24	SENT 4
	PIN 25	GND	PIN 26	VCC_5 V	PIN 27	SENT 6
	PIN 28	GND	PIN 29	VCC_5 V	PIN 30	SENT 8
	PIN 31	GND	PIN 32	VCC_5 V	PIN 33	SENT 10
	PIN 34	GND	PIN 35	NULL	PIN 36	NULL
	PIN 37	NULL				

• SENT 11/20

	PIN 1	SENT 11	PIN 2	GND	PIN 3	VCC_5 V
	PIN 4	SENT 13	PIN 5	GND	PIN 6	VCC_5 V
	PIN 7	SENT 15	PIN 8	GND	PIN 9	VCC_5 V
	PIN 10	SENT 17	PIN 11	GND	PIN 12	VCC_5 V
	PIN 13	SENT 19	PIN 14	GND	PIN 15	VCC_5 V
	PIN 16	NULL	PIN 17	NULL	PIN 18	NULL
	PIN 19	NULL	PIN 20	VCC_5 V	PIN 21	SENT 12
	PIN 22	GND	PIN 23	VCC_5 V	PIN 24	SENT 14
	PIN 25	GND	PIN 26	VCC_5 V	PIN 27	SENT 16
	PIN 28	GND	PIN 29	VCC_5 V	PIN 30	SENT 18
	PIN 31	GND	PIN 32	VCC_5 V	PIN 33	SENT 20
	PIN 34	GND	PIN 35	NULL	PIN 36	NULL
	PIN 37	NULL				