



AUGUST 1978

INS8216/8226 4-Bit Bidirectional Bus Transceivers

General Description

The INS8216 and INS8226 are four-bit bidirectional bus drivers for use in bus oriented applications. The non-inverting INS8216 and inverting INS8226 drivers are provided for flexibility in system design.

Each buffered line of the four-bit driver consists of two separate buffers that are TRI-STATE® to achieve direct bus interface and bidirectional capability. On one side of the driver the output of one buffer and the input of another are tied together (DB); this side is used to interface to the system side components such as memories, I/O, etc., because its interface is TTL compatible and it has high drive (50mA). On the other side of the driver the inputs and outputs are separated to provide maximum flexibility. Of course, they can be tied together so that the driver can be used to buffer a true bidirectional bus. The DO outputs on this side of the driver have a special high voltage output drive capability so that direct interface to the 8080 type CPUs is achieved with an adequate amount of noise immunity.

The CS input is a device enable. When it is "high" the output drivers are all forced to their high-impedance state. When it is a "low" the device is enabled and the direction of the data flow is determined by the DIEN input.

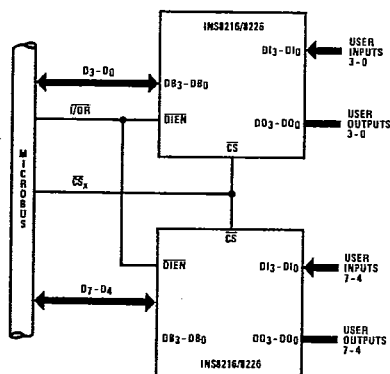
The DIEN input controls the direction of data flow, which is accomplished by forcing one of the pair of buffers into its high-impedance state and allowing the other to transmit its data. A simple two-gate circuit is used for this function.

Features

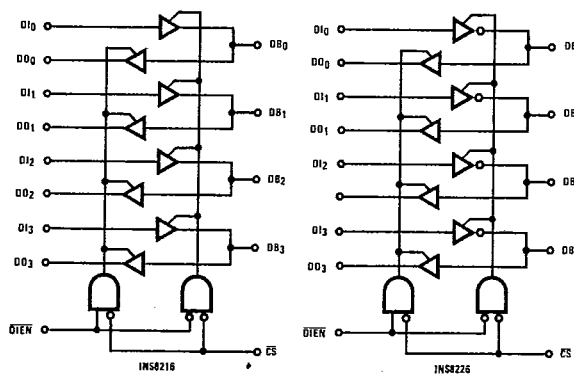
- Data bus buffer driver for 8080 type CPUs
- Low input load current — 0.25mA maximum
- High output drive capability for driving system data bus — 50mA at 0.5V
- Power up-down protection
- The INS8216 has non-inverting outputs.
- The INS8226 has inverting outputs.
- Output high voltage compatible with direct interface to MOS
- TRI-STATE outputs
- Advanced Schottky processing
- Available in military and commercial temperature ranges
- MICROBUS™ compatible

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INS8216/8226 MICROBUS Configuration



Logic Diagrams



*Trademark, National Semiconductor Corp.