



MEMORANDUM

Date: November 21, 2006
To: Applications, Sales
From: Scott Orlosky
Re: Replacing old output drivers with the 7273

As you are aware, we are continuing to update the electrical drive circuits offered on our encoders. Accordingly we have been consolidating all of our open collector style outputs IC's into the 7273 output driver. This process began several years ago and affects any prior BEI model that may have used 3302, 3904, 681, 689 or 7406 as the designated output IC. Where the prior output IC had used an "R", designating the presence of internal pull-up resistors, it can be replaced with 7273R.

- The 7273 can sink up to 80 mA. Current is sourced through a pull-up resistor.
- The output can be pulled up to a voltage other than the supply voltage using external pull-up resistors.
- 7273 is protected against short circuit, over voltage and reverse voltage.

The 7273 has been thoroughly tested in our labs and at customer sites and we have been making these IC substitutions for several years. Our testing and field experience demonstrate that the 7273 has excellent drive characteristics and reliability.

In most cases, when converting to the new driver, the existing encoder part number will remain the same. The model number will be modified with the digits 7273 replacing the prior IC designation. A specification for the 7273 IC has been included in this memo. Please share this memo and specification with our customers, as appropriate, so that we can continue to implement this change as smoothly as possible.

Detailed technical questions can be addressed by contacting Les Wolff, Engineering Manager at (805) 968-0782 ext 241.



7273 DRIVER ELECTRICAL SPECIFICATIONS

- **Output Protection**
- **Power Surge Protection**
- **Reverse Voltage Protection**
- **Over voltage Protection**
- **Multiple Voltage Operation**
- **Open Collector NPN Output**
- **80 mA Maximum Current Sink**
- **Interpolation Options Available on Incremental Type Outputs**

The 7273 driver is available on incremental and absolute encoder models H25, L25, E25, L15, H20, HS20, HS22, HS25, HS35, H38 and H40.

It is an open collector (NPN) current sinking driver. Complementary outputs are available for driving differential inputs. It offers output protection, power surge protection, and multiple voltage operation. The outputs are capable of sinking over 80 mA. The optional, internal pullup resistors are available on many models. If significant current sourcing is needed, refer to the 7272 driver.

The power supply inputs of the 7273 encoder are protected against reverse voltage and over voltage. If a reverse voltage is placed on the encoder supply, the encoder draws current for a short period of time, and then shuts down. The critical encoder components are not exposed to damaging reverse voltage. If a voltage greater than 30 volts is placed on the encoder supply lines, the encoder draws current above the 120 mA specification or shuts down entirely.

An electrical surge caused by power-up, ESD, or power line fluctuation is shunted by the protection circuitry. This circuitry utilizes a thermally operated fuse (Note: At low temperatures, below 0 degrees C, the over voltage and reverse voltage protection are not reliable due to the thermal nature of the fusing).

The 7273 is built to operate with a power supply of 4.75 – 29.4V, eliminating the need for the customer to tightly specify the operating voltage.

Caution: *While the 7273 circuit protection is far better than an unprotected circuit, these parts can be made to fail if the outputs are shorted longer than their maximum limits or if the output pins are connected to power or ground without power or return supplies connected.*