

MODELS

R30 and SR30

ABSOLUTE ENCODERS



- 10-bit, single turn
- Up to 1024 Counts/revolution
- Exact shaft position is output even after power interruption
- Gray Code, Natural Binary and Custom output codes
- Parallel or serial output
- R30 is high speed & low delay
SR30 is very economical
- 5vdc and 8-28vdc models
- Optional sealed enclosure
- Economical DB25P connector or optional sealed connector
- 3/8" or 1/2" diameter shaft
- Rugged aluminum housing

10 Bit Industrial Grade Absolute Encoder

The **R30** and **SR30** are 10-bit, single-turn, digital, rotary absolute position encoders intended for industrial applications requiring up to 1024 uniquely identifiable positions per revolution.

The **R30** uses a single, infrared LED that provides a uniform, dependable light source, and is used to read one of up to 1024 unique codes from a code disk. The absolute code disk contains a cyclic binary code known as gray code which is precisely imprinted on 10 concentric tracks. Each track represents one bit of resolution. A radial line of the disk is optically read by an array of 10 very precisely positioned phototransistors. Circuitry then converts the code to digital signals that are output on the 10 parallel output lines. Gray code was selected because one, and only one, bit changes between each adjacent code. This means that there are never any ambiguous readings caused by multiple bits changing as the disk is rotated from one code value to another. Use of an absolute code disk also

guarantees that the R30 provides correct positional information even if the system is moved while power is off.

Models that offer other output codes such as natural binary (NB) also use the gray code disk internally. Conversion circuitry translates the gray code to any customer specified code up to 16 bits wide (serial outputs are also possible). A DataReady signal indicates when the outputs are changing so that ambiguities can be avoided, and it can also be used to clock an external latch.

The **SR30** uses a patented, cost saving technology that relaxes the precise alignment tolerances required by the R30 by an order of magnitude without sacrificing accuracy. It is based on a linear array sensor and microcontroller that read and interpret a uniquely designed absolute code disk. The SR30 functions identically to the R30 in all respects, except the update rate is lower: 1KHz for the SR30 and 3KHz for the SR31 models.