

TTL Signal Adapter Unit

When the angular velocity (speed of rotation) of a rotating shaft is to be measured, sensors which detect at constant angular intervals around the shaft's circumference are widely used. The signal resulting from this type of measurement is a square wave TTL pulse train whose frequency is proportional to the shaft's angular velocity. The periodic times (T) of the pulses (time interval from positive edge to positive edge) may then be measured with a high-speed counter / timer data acquisition board. The instantaneous angular velocity is then calculated by dividing the angle between the measuring points on the shaft circumference by the time intervals (T) from pulse to pulse.

The TTLAD unit from rotec is used for detection of positive (rising) and or negative (falling) TTL signal edges. Each time a positive and / or negative edge is detected the unit outputs a 10 μ s wide pulse.



Switch Settings

There are three ,edge' switch settings: ,pos', ,neg' and ,both'. The ,pos' (= positive) setting produces output pulses when positive edges are detected on the input signal. The ,neg' (= negative) setting produces output pulses when negative edges are detected on the input signal. The ,both' setting produces output pulses when positive and negative edges are detected on the input signal.

The TTL adapter operates up to an input frequency of 49 kHz (TTL input signals). The delay time between the input and output signal has a maximum value of 40 ns. The supply voltage is 5 V and the input is protected to ±80 V.

Input and Output Signals



Technical Specifications

- input signal: square wave TTL level
- output signal:
 - square wave TTL level
 - 10 µs pulse width
- max. input frequency: 49 kHz

- delay time: max. 40 ns
- supply voltage: 5 V