MOTION CONTROL

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INDUSTRIAL CONTROLLER AND CONDITIONER FOR
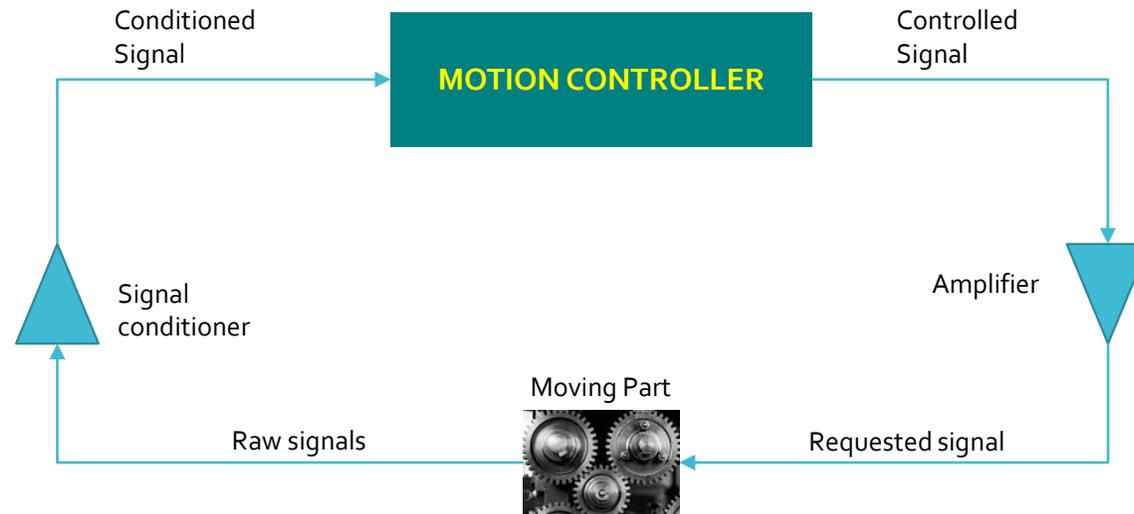MECHANICAL MOVING PART

Product Category : Automation

MuconICs
ELECTRICAL SPECIFICATIONS

Air gap
Differential hall
Output waveform(V)
Rotation direction
Timing rotor attached to the camshaft
ECU

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MOTION CONTROLLER LOOP

Motion control is a sub-field of automation, encompassing the systems or sub-systems involved in moving parts of machines in a controlled manner. The main components involved typically include a motion controller, an energy amplifier, and one or more prime movers or actuators. Motion control may be open loop or closed loop. In open loop systems, the controller sends a command through the amplifier to the prime mover or actuator, and does not know if the desired motion was actually achieved. Typical systems include stepper motor or fan control. For tighter control with more precision, a measuring device may be added to the system (usually near the end motion). When the measurement is converted to a signal that is sent back to the controller, and the controller compensates for any error, it becomes a Closed loop System.

Conditioned Signal

MOTION CONTROLLER

Controlled Signal

Signal conditioner

Amplifier

Moving Part

Raw signals

Requested signal

Product Category : Automation

Rotary gear zero speed process controller

Monitoring speed is essential in any automation process. Speed of any equipment driven by an electric motor can very due to variety of reason. Overload, breakage of transmission part tec. In case of open loop control, a speed monitoring and zero speed are useful to either give an alarm or to switch "off" the motor. In case of a loop control DC drive, a feedback is required 4-20 mA, 0-10 Volts.

Zero speed switches (ZSS) also known as speed actuating sensing switches are used to detect the stoppage or unacceptably slow movement or a rotating shaft. Generally its application are various machines, conveyor, power plants, and industries involving the production of cement, sugar, textiles and mining.

OUTPUT DEVICE

SENSOR DEVICE

RAW SIGNAL HANDLING DEVICE

OUTPUT SIGNAL CONTROL HANDLING PROGRAM

COMPARATOR

SQUARE WAVE OSCILATOR

MAIN CONTROL PROGRAM

SUB CONTROL PROGRAM 1

SUB CONTROL PROGRAM 2

DIGITAL DATA BUS (I)

INPUT DEVICE

CONTROLLER SETPOINT

The speed / motion object is sensed by a non contact inductive sensor. The sensor probe is installed with it's sensing face in close vicinity of rotating object. The metallic pieces (flags) with specified dimensions are to be mounted on the rotating object. When these flags pass across the face of the probe, the frontally radiated electromagnetic field of the probe damped which is converted to a corresponding output pulse.
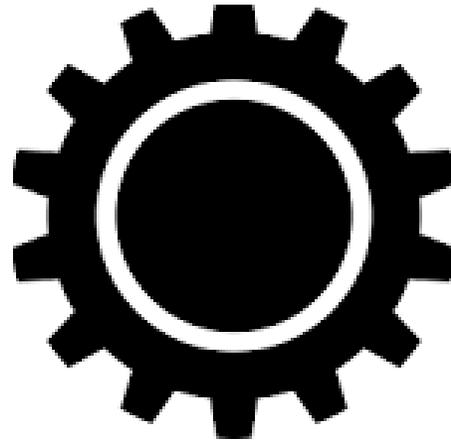
These pulse are digital in nature and the circuit is designed to work in electrically noise area. However the interconnecting cable should be of minimum.

Product Category : Automation
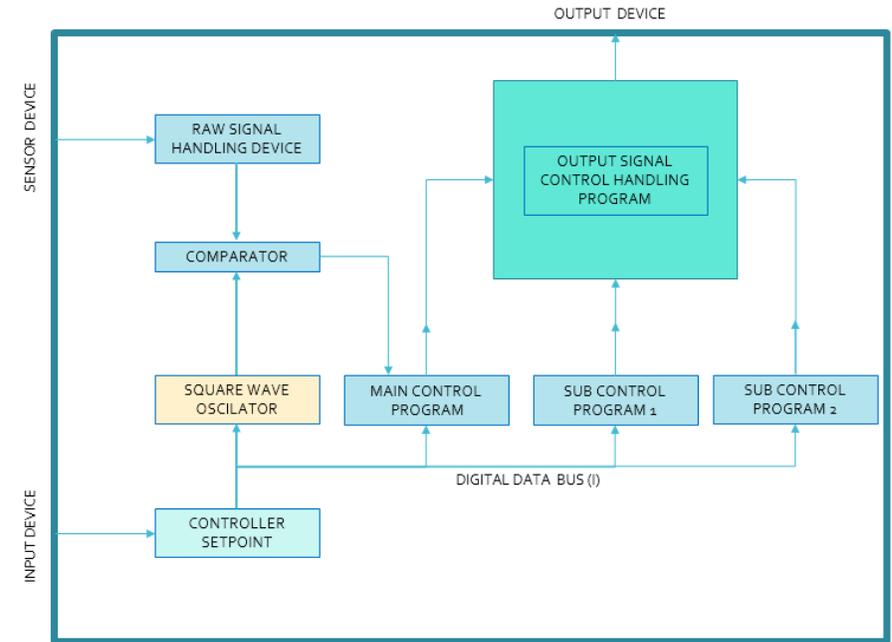
Rotary gear zero speed sensor

Simple methodology to detect the motion of mechanical rotary gear is using proximity sensors technology. Sensors or proximity is installed near the rotary gear tooth to detect movement of rotary gear tooth. Typically the out of the sensors can be sine wave form or square wave form. With the certain voltage level in volts or millivolts and the certain electrical impedance in Kilo ohm to Mega ohm. It depends to the type of censor being use.

following picture illustrates the block diagram signals processing to nes the movement direction, speed and inside of gear condition. The are wave signals is a main input of the system calculate all of the vement parameter.

Raw Signals

Speed processors

Generated Square Wave

Three outputs signals can be defined
1. Direction Reverse
2. Direction Forward
3. Speed / Rpm
4. Inside gear condition
5. Movement status

Product Information

☀ Single channel motion gear detection sensor

The most common style of gear tooth detecting sensors are single channel digital Hall Effect gear tooth sensors and passive Variable Reluctance Sensors. This sensor output is digital square wave pulses (one per tooth). These sensors are true zero speed Gear Tooth Sensors that work up to 10 KHz frequency. (**See product range**)

☀ Two or three channel motion gear detection sensor

Gear Tooth Sensors   Speed & Direction Gear Tooth sensors provide multiple outputs for resolving either the speed and direction of gear tooth rotation, or for directional counting of gear teeth. The output two digital square wave pulse trains that are out of phase. By comparing the channels a tachometer can indicate the direction of rotation along with a speed or a counter can increase or decrease a count. The output of single square wave pulse train for monitoring speed or tracking count along with a second output that switches between a high and low voltage dependent on the direction of rotation. These 5 wire sensors output two out of phase pulsing channels and the high/low output of the Speed and Direction Sensors in a single package . (**See product range**)

☀ Speed switch motion gear detection

When detecting an over-speed, under-speed, or zero-speed condition is required in an application any of our Gear Tooth Sensors can be connected to a precision programmed. Speed switch provide 1 digital pulsing speed output and a second output (relay or transistor available) that switches at a specified frequency. This low-cost solution will switch on/off within +/- 15% of the specified switch frequency. . (**See product range**)

Product Category : Automation

Product range

Motion detection motion sensors,

S12-18ADS-5KCB2 Gear Detection Sensors,

S12-18ADS-5KCP2 Gear Detection Sensors

S12-18ADS-5KCD3 Gear Detection Sensors

S12-18ADS-5KJA5 Gear Detection Sensors

S12-18ADS-5KR22 Gear Detection Sensors

S12-18ADS-5KT21 Gear Detection Sensors

S12-18ADS-5KP21 Gear Detection Sensors

S50FW-18ADS-5KCP2 Gear Detection Sensors

S50FW-18ADS-5KCD3 Gear Detection Sensors

S50FW-18ADS-5KSB5 Gear Detection Sensors

Online data sheet

Motion detection signal transmitter,

FM-TACH-DCTBC Accessories

MWM5-TACH-ACCB1F Accessories

FM-TACH-ACTBC Accessories

FM-TACH-DCRTBC Accessories

MWM5-TACH-ACCB1M Accessories

MWM5-TACHD-ACCB1M Accessories

Online data sheet

How to order

Product Category : Automation

Ordering Information

D1	/	D2	/	D3	/	D4	/	D5

D1 : Product Category

AP	**Automation**
EP	**Electrical**
MP	**Mechanical**

D2 : Request work Category

10	**Service**
20	**Good**

D3 : Material identification (type of sensor you want to request)

D4 : Product Quantity

D5 : 1 = Integrated product, 0 = Non Integrated product

EXAMPLE: AP / 20 / S12-18ADS-5KCB2/012/0

Requests for gear detection sensor type S12-18ADS-5KCB2/012 with quantity 12 without integrated