



Moniteur VPTs are available with a wide variety of industry proven inductive sensors for today's advanced process PLCs. Whether your process control system requires PNP, NPN, or NAMUR Intrinsically Safe rated sensors, Moniteur can supply the preferred position transmitter. Sensors available are shown in the table below.

Note: When specifying these sensors, be sure to determine from the end user whether their I/O card is compatible with the sensor specifications.

Principle of Operation

- ▶ Inductive sensors are "solid state" (without moving parts) and are the most reliable of sensing methods, with a MTBF over 20 million cycles. Inductive Sensors have three parts of operation - the oscillator, triggering circuit and switching amplifier. The oscillator generates a high-frequency electromagnetic field in the sensor's target area. When a ferrous metal target enters the electromagnetic field (target area), eddy currents created in the target by the oscillator increase the load on the oscillator. At a specific load, the trigger circuit senses the reduction in oscillation and signals the switching amplifier to change the signal. Inductive Sensors consume electric power to operate, and must have approval to be used in hazardous areas (see table below).
- ▶ NAMUR inductive sensors operate without the amplifier circuitry in the sensor, allowing use in all hazardous areas. The required signal amplifier is installed externally in the safe area and is usually combined with the Intrinsically Safe barrier (sold separately).

Applications

- ▶ Hazardous areas rated Division 2. The P&F sensors are UL and CSA listed approved for general purpose and FM approved Nonincendive or hazardous areas rated Division 2
- ▶ Intrinsically Safe. NAMUR Inductive Sensors are rated Intrinsically Safe and must be used with an approved current and voltage limiting barrier.
- ▶ To assist cam setting, the P&F NBB-V3-Z4 Sensors include setting lights in the sensor housing.

Specifications - Inductive Sensors

P&F Sensor	Switch Code	Type	Supply Voltage	Load Current / Target Absent	Load Current / Target Present	Sensor FM Approval
NJ2-V3N	8	NAMUR	5-25 VDC	< 1 mA	3 - 15 mA	Intrinsically Safe
NBB3-V3-Z4	K	2 wire DC	5-60 VDC	< 1 mA	4 - 100 mA	Nonincendive Div. 2
NBB2-V3-US	Q	2 wire AC/DC	10-140 VDC	< 1 mA	5 - 200 mA	Nonincendive Div. 2
NBB2-V3-E0	M	3 wire DC-NPN	10-30 VDC	< 1 mA	5 - 100 mA	Nonincendive Div. 2
NBB2-V3-E2	N	3 wire DC-PNP	10-30 VDC	< 1 mA	5 - 100 mA	Nonincendive Div. 2

*Moniteur can also supply Valve Position Transmitters with other adaptable sensors to your specifications.