

# PIG DETECTION SYSTEM

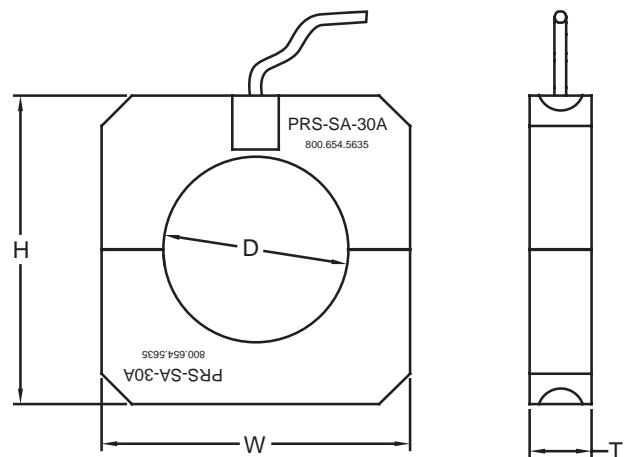


## Application

CSI's Pig Detection System is specially designed to sense the position of the product recovery pig at any point in the process line from launcher to catcher. When used with any of CSI's detectable pigs, this non-intrusive device can be used to provide additional automation to your product recovery operation by supplying a signal based on the pig's position that can control such things as air solenoids, pumps, signal lights or alarms.

## Design

Available in sizes 1 ½" through 4", the sensor consists of a momentary-contact 24VDC sensor imbedded in a non-intrusive mounting bracket. The bracket is a robust, heavy-duty clamp machined from solid aluminum and anodized for optimum corrosion resistance. The two-piece design of the sensor clamp allows for easy installation around standard OD tubing. The sensor includes six feet of PVC coated potted-in cable.



## Installation

Depending on your requirements, multiple sensor blocks may be installed at a variety of locations in the process line or just a single sensor block can be used. In most applications, multiple sensors provide the greatest

NOM. SIZE	PART NUMBER	H	W	D	T
1 ½	PRS-SA-15A	5.00	5.00	1.50	1.00
2	PRS-SA-20A	5.00	5.00	2.00	1.00
2 ½	PRS-SA-25A	5.00	5.00	2.50	1.00
3	PRS-SA-30A	5.00	5.00	3.00	1.00
4	PRS-SA-40A	6.00	6.00	4.00	1.00

Dimensions are in inches.

advantage. Not only can they provide more accurate tracking of the location of the pig, they also allow the pig to signal air controls to gradually reduce the air flow and pressure as the pig progresses through the product recovery cycle. This helps the pig maintain the appropriate line velocity for optimum product recovery and avoids unnecessary damage to the pig by reducing its speed prior to docking in the catcher.

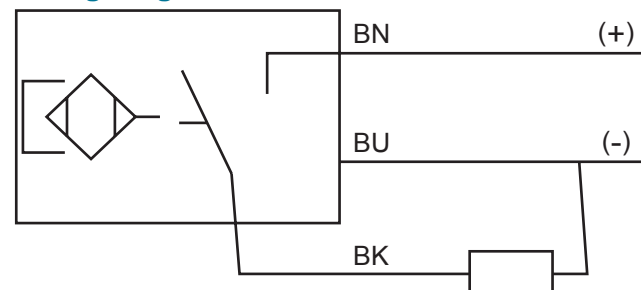
- Mount sensor away from heavy traffic areas or main paths of egress
- Avoid mounting sensor within 5 feet of electric motors or any other electrical equipment
- Do not mount sensor within 5 feet of any source of strong magnetic field

## Typical Sensor Locations, Events and Signal Uses

LOCATION	EVENT	SIGNAL
Launcher	Product recovery cycle begins	Energize signal light; open or close valves; signal PLC
Intermediate Locations	Pig location monitoring; reduce air pressure/flow	Control air solenoid; signal PLC
Catcher	Product recovery cycle is complete	Energize signal light; energize alarm; shut off air solenoid; open or close valves; shut off pump; signal PLC

- Determine the approximate locations in the process line where the sensor blocks should be installed for optimum performance for your application. Remember, after initial installation the location of the sensor blocks can easily be adjusted to adapt to changes in your application.
- Clean the outside of the process line of debris to ensure a snug fit with the sensor block.
- Separate the two halves of the sensor block by removing the two 1/4" bolts holding them together.
- Place the radiused edge of either half of the sensor block on the top of the process line at the predetermined location. Ensure that the block seats snugly against the process tubing. There should be no gaps between the sensor block and the tubing.
- Insert the two 1/4" bolts with flat washers through the holes in the top half of the sensor block.
- Align the radiused edge of the other half of the sensor block around the bottom of the process line opposite the first half, so that the bolt holes of the block halves line up with each other. The exposed portion of the 1/4" bolts should easily slide into the bolt holes on the bottom half of the block. The bottom half should seat snugly against the process tubing and the bolt holes should be aligned.
- Secure the blocks together by assembling the 1/4" washers and locknuts onto the bolts. Do not tighten completely.
- Adjust the location of the assembled sensor block to the predetermined location. The sensor can be rotated 360° around the process tubing to allow for easy wiring.
- Once you have placed the sensor in the desired location and have rotated it to the desired orientation, tighten the bolts and nuts making sure that the block halves are securely seated against the tubing.

### Wiring Diagram



### Specifications

Output	3-wire DC PNP
Operating voltage	10-30 VDC
Load current	200 mA
Voltage drop across conducting sensor	≤ 1.8V
Hysteresis (differential travel)	3-15% (5% typical)
Repeatability	≤ 2% of rated operating distance



**Warning:** Hazardous voltage can cause electrical shock and burns. Disconnect power before proceeding with any work on this or any electrical equipment.