PIG-SIG® NI
Non-Intrusive Pig Passage Indicator

The PIG-SIG® NI makes the following options available to help customers meet individual application needs:

- Long-distance viewing that permits operators to see confirmation of pig passage up to 100 meters away or from a helicopter or light aircraft (24-volt DC units only).
- Upon request, a satellite link communication system called LineStat can be provided with the PIG-SIG NI. LineStat can remotely send emails or text messages through a satellite-based global service to one or more people when pig passages occur.
- Also available:
  - 24-volt DC units for temperatures to -22ºF (-30ºC).
  - Models for environmentally harsh conditions. Consult factory for options.

The PIG-SIG® NI produces simple and reliable, non-intrusive detection of pig passages anywhere within a pipeline system. The unit is easily banded onto the line, where it immediately begins scanning both for transmitter and permanent magnet-equipped pigs. No tapping is required, saving the operator time and money normally spent on the installation of conventional signal devices. (See five easy steps to install on page 4 of this bulletin.)

When pigs pass the PIG-SIG NI, the time and date are clearly displayed on a high-contrast, easily viewed LCD screen, along with a flashing “Recent Passage” message. If multiple pig passages have occurred, dates and times of the last 10 passages may be retrieved by simply scrolling back through the PIG-SIG NI memory.

The PIG-SIG NI also offers options that include enhanced long-distance viewing, even from helicopters or light aircraft.

Features

The PIG-SIG NI standard enclosure is a fully certified aluminum, explosion-proof housing with a tempered glass window. The unit is attached to the pipeline with stainless steel bands and buckles.

The Non-Intrusive Pig Passage Indicator is designed to detect TracMaster™ CD42-Tx pig location, tracking transmitters, and TDW Trip Magnets. It is bi-directional with auto reset on every passage. Detection speeds range from 0.1 meters per second to 20 meters per second.

The PIG-SIG NI fits 3- through 72-inch (75 mm - 1800 mm) line sizes and works on pipe wall thicknesses up to 1.5 inches (38.1 mm). The unit can operate for a full year on just two standard 1.5-volt DC D-cell alkaline batteries. Operating temperatures range from -58ºF to 176ºF (-50ºC to 80ºC) with standard alkaline battery-powered units capable of operating from -4ºF to 129.2ºF (-20ºC to 54ºC). A heater module option powered by 24 VDC input is required for units operating below -4ºF (-20ºC).

The PIG-SIG NI electrical circuitry utilizes a double-pole, double-throw isolated contact closure that closes after pig passage and opens again in 15 seconds. Its maximum operating current is 2 amps at 30 volts DC. A portable version, which operates only on battery power, can be removed from one location to another.

The visual indicator is an LCD flash for one hour, constant for 11 hours, then auto reset. It can also be reset manually.

AEX, UL/CSA, IECEx Certified

System Certification:
- SIRA 13 ATEX1381
- IECEx CSA 13.0039/00
- UL/CSA Standard C22.2 No.30 rated for Class 1 Division 1 explosion-proof environments groups C and D, Tamb -50ºC to +80ºC

Patented in the United States and in other countries.
The high-contrast LCD screen gives the operator a clear view of the time and date of pig passage.

### Sizes and Part Numbers

**PIG-SIG® NI**

The high-contrast LCD screen gives the operator a clear view of the time and date of pig passage.

- **Option Type**
  - 0: Rigid or No Extension
  - 1: Flexible Extension
  - 21: ATEX-Certified – 3V D-Cell or 24VDC

- **Model - AA**
  - Option Model Type
    - 01: 3V D-Cell or 24VDC - Standard
    - 02: 3V D-Cell - Portable
    - 21: ATEX-Certified – 3V D-Cell or 24VDC

- **Extension Length - BB**
  - Extension Length (in feet)
  - No extension, BB = 00
  - Note: Rigid extension length available only up to 20 feet

- **Extension Type - C**
  - Option Type
    - 0: Rigid or No Extension
    - 1: Flexible Extension

**Standard Unit (with Rigid Extension) Length Dimensions**

<table>
<thead>
<tr>
<th>Extension Length (in feet)</th>
<th>A Dim (inches)</th>
<th>B Dim (inches)</th>
<th>C Dim (inches)</th>
<th>D Dim (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB = 01</td>
<td>24.5</td>
<td>4.1</td>
<td>10.6</td>
<td>19.0</td>
</tr>
<tr>
<td>BB = 02</td>
<td>36.0</td>
<td>15.7</td>
<td>22.2</td>
<td>30.7</td>
</tr>
<tr>
<td>BB = 03</td>
<td>48.0</td>
<td>27.7</td>
<td>34.2</td>
<td>42.7</td>
</tr>
<tr>
<td>BB = 04</td>
<td>60.0</td>
<td>39.7</td>
<td>46.2</td>
<td>54.7</td>
</tr>
<tr>
<td>BB = 05</td>
<td>72.0</td>
<td>51.7</td>
<td>58.2</td>
<td>66.7</td>
</tr>
<tr>
<td>BB = 06</td>
<td>84.0</td>
<td>63.7</td>
<td>70.2</td>
<td>78.7</td>
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<tr>
<td>BB = 07</td>
<td>96.0</td>
<td>75.7</td>
<td>82.2</td>
<td>90.7</td>
</tr>
<tr>
<td>BB = 08</td>
<td>108.0</td>
<td>87.7</td>
<td>94.2</td>
<td>102.7</td>
</tr>
<tr>
<td>BB = 09</td>
<td>120.0</td>
<td>99.7</td>
<td>106.2</td>
<td>114.7</td>
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<tr>
<td>BB = 10</td>
<td>132.0</td>
<td>111.7</td>
<td>118.2</td>
<td>126.7</td>
</tr>
</tbody>
</table>

*Standard product is UL/SCA rated.*
TDW Trip Magnets

TDW PIG-SIG® NI trip magnets are high-strength, rare-earth, permanent magnets which have been potted into a PVC or anodized aluminum outer shell. Each one has an integral 1/2-inch UNC stainless steel mounting stud. TDW PIG-SIG® trip magnets are supplied in three sizes: M1 for pigs up to 14-inches, M2 for pigs 16- thru 30-inches, and M3 for pigs 32- thru 48-inches. For pipes above 48-inch in O.D., custom trip magnets can be designed. Other types of trip magnets can be provided to suit customer needs. Standard trip magnets are rated up to 150º C / 300º F.

TDW PIG-SIG NI trip magnets will work effectively on virtually any brand or type of mechanical pig except spheres. Generally, the TDW PIG-SIG NI trip magnet should be mounted at or near the longitudinal axis of the pig, where it is not surrounded by metal. The long axis of the magnet should be along the central axis of the pig.

On certain types of non-metallic pigs, the magnet can be placed within the body, such as TDW’s OptionAll™ pigs. On foam pigs with built-in transmitter cavities, the magnet can be placed inside the cavity. On foam pigs without transmitter cavities, the magnet can be placed inside a hole that the user cuts into the rear of the pig. RTV Silicone may be used to seal the opening. For internal mounting dimensions, refer to the chart below.

On small, mandrel-body type pigs, such as TDW’s WCK Pig, it will be necessary to modify the rear of the pig to add a special mounting bracket to accept the magnet. On large-bodied pigs, such as TDW’s VANTAGE® Pig, a simple mounting plate can be added to the rear of the pig. The TDW PIG-SIG NI trip magnet requires a 0.562-inch diameter mounting hole for attachment to a bracket or plate and should be secured with a 1/2-inch UNC lock-nut.

The exact mounting component will vary from pig to pig. If the user cannot determine a suitable mounting, contact TDW and it will supply the necessary mounting parts for any brand or type of pig.

Dimensions and Part Numbers

<table>
<thead>
<tr>
<th>Trip Magnet</th>
<th>Pipe Size</th>
<th>Minimum Opening Sizes Required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Diameter</td>
</tr>
<tr>
<td>M1</td>
<td>up to 14</td>
<td>1.375</td>
</tr>
<tr>
<td>M2</td>
<td>16 - 30</td>
<td>1.375</td>
</tr>
<tr>
<td>M3</td>
<td>32 &amp; above</td>
<td>1.625</td>
</tr>
</tbody>
</table>

*When the surface temperature of the pipe exceeds the maximum temperature rating of the unit, a Heat Insulator Kit must be installed between the bracket/antenna and the pipe.

NOTE: When using the Heat Insulator, the next larger pipe size banding kit will be required.
5 Easy Steps to Install

1. Buckle and band pre-assembly.

2. Band attaching base to pipeline.

3. Tighten tension on bands.

4. Trim off excess banding.

5. Secure the buckles.