

PIG-SIG[®] NI

Non-Intrusive Pig Passage Indicator

ATEX, UL/CSA, IECEx Certified



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■ PIG-SIG[®] NI
Non-intrusive
pig passage
indicator



Description

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 -58°F to 176°F (-50°C to 80°C) with standard alkaline battery-powered units capable of operating from -4°F to 129.2°F (-20°C to 54°C). A heater module option powered by 24 VDC input is required for units operating below -4°F (-20°C).

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.

Options

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 message through a satellite-based global service to one or more people when pig passages occur.

Also available:

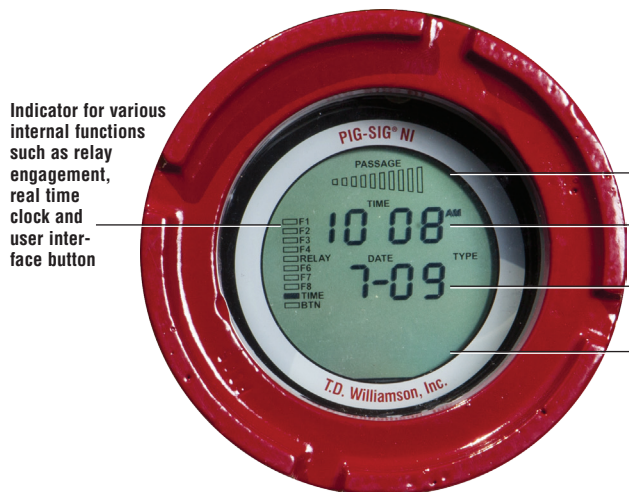
- 24-volt DC units for temperatures to -22°F (-30°C).
- Models for environmentally harsh conditions. Consult factory for options.

System Certification:

- SIRA 13 ATEX1381
- IIIG Ex d mb IIB T5 Gb IP66
- IECEx CSA 13.0039/00
- Ex d mb IIB T5 Gb IP66
- UL/CSA Standard C22.2 No.30 rated for Class 1 Division 1 explosion-proof environments groups C and D, Tamb -50°C to +80°C

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.



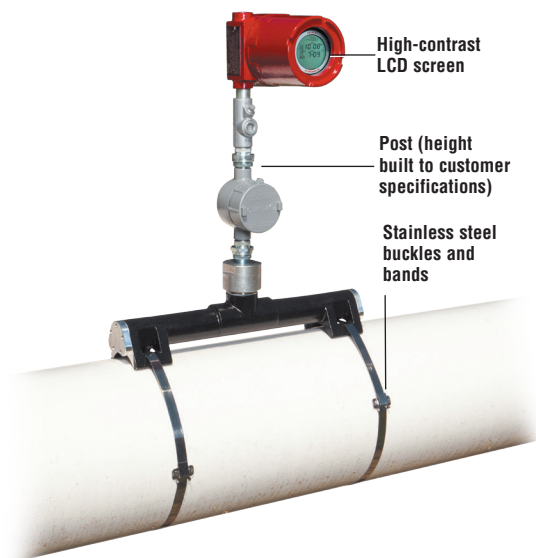
Indicator for various internal functions such as relay engagement, real time clock and user interface button

Representation of the last 10 pig passages recorded in memory

Passage time / current time

Passage date / current date

Either flashing or steady light indicator for recent pig passage



High-contrast LCD screen

Post (height built to customer specifications)

Stainless steel buckles and bands

04 - 3575 - AA BB - C D

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

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

Optional Features - D

Option	Feature
0	No Options
1	Internal Heater Option
2	Remote Indicator System
3	Internal Heater and Remote Indicator

Example

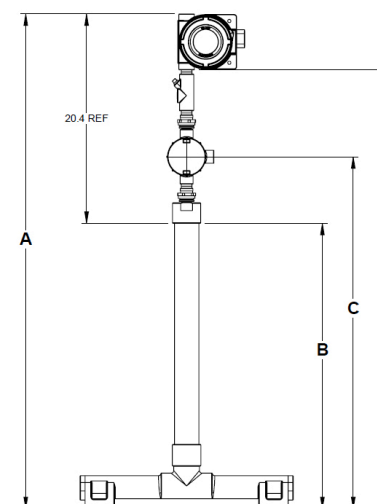
04-3575-0135-11 is a PIG-SIG® NI which includes the following:

- A 3V D-Cell or 24VDC - Standard
- An Extension length of 35 feet
- A Flexible Extension
- An Internal Heater Option

Standard Unit (with Rigid Extension) Length Dimensions

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

*Standard product is UL/SCA rated.



PIG-SIG® NI

Parts & Accessories

Option	Part Number
Banding tool	04-3575-0005-00
Standard carrying case	04-3575-0010-00
Carrying case for Portable Unit	04-3575-0018-00
Banding kit for 3" - 14" pipe includes 2 each 5-foot bands and 2 buckles	04-3575-0009-01
Banding kit for 16" - 34" pipe includes 2 each 10-foot bands and 2 buckles	04-3575-0009-02
Banding kit for 36" - 52" pipe includes 2 each 15-foot bands and 2 buckles	04-3575-0009-03
Banding kit for 54" - 72" pipe includes 2 each 20-foot bands and 2 buckles	04-3575-0009-04
Heat Insulator Kit*	04-3575-0022-00
Non-Conductive Isolator for Cathodic Protection	04-3575-0026-00

*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.

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 150° C / 300° 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

Trip Magnet	Pipe Size		Minimum Opening Sizes Required				Weight		Part Number
	Inches	mm	Diameter		Length		Lbs.	Kg.	
M1	up to 14	up to 350	1.375	35	3.370	86	1	0.5	04-3575-0004-01
M2	16 - 30	400 - 750	1.375	35	7.750	197	3	1.4	04-3575-0004-02
M3	32 & above	800 & above	1.625	41	13.125	333	5	2.3	04-3575-0004-03

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.

