

# **HAZARDS MANUAL**

## **PRECISION TURBINE FLOWMETERS**



***LIQUID CONTROLS SPONSLE, INC.***

**FLOW MEASURING DEVICES AND CONTROLS**

**A Unit of the IDEX Corporation**

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### Publication Updates and Translation

The most current English versions of all Sponsler publications are available on our website, [www.sponsler.com](http://www.sponsler.com). It is the responsibility of the Local Distributor to provide the most current version of Sponsler Manuals, Instructions, and Specification Sheets in the required language of the country, or the language of the end user to which the products are shipping. If there are questions about the language of any Sponsler Manuals, Instructions or Specification Sheets, please contact your Local Distributor.

### INTRODUCTION

This manual provides details of some of the standard regulatory approvals carried on Sponsler's products. There are many approvals that may be applicable to a specific installation or product type. The owner must ensure that the system into which the product is installed complies with all applicable local regulations. This manual is designed to accompany the manuals supplied with Sponsler's components ordered. Any information relating to ATEX or PED requirements not found in the accompanying manuals will be found in this manual.

Only trained personnel should install, operate, and maintain Sponsler's meters, registers, and accessories

## SYSTEM REQUIREMENTS

### System Information

This manual provides warnings and procedures that are intended to inform the owner and operator of potential hazards present when using Sponsler meters and accessories. The reading of these warnings and the avoidance of these hazards is strictly the responsibility of the owner and operator of this equipment. Neglect of this responsibility is not within the control of the manufacturer of the meter and accessories.

The system into which these components are installed must have a safe means of:

- Filling
- Discharging
- Draining
- Relieving pressure
- Shutting down in an emergency
- Protection in the event of an external fire

### System Considerations

Sponsler components are considered pressure accessories only. They are not suitable for preventing system damage or failure. They have not been protected against external or internal damage from system or environmental factors such as:

- Overpressurization (pumps size, thermal expansion, blockage discharge etc.)
- Hydraulic shock
- Excessive vibration
- Closed valves
- Overheating
- Extreme cold
- Temperature extremes outside of flowmeter ratings
- Pressure surges, pulsations
- Lightning
- Seismic load
- Fire/explosion-engulfment
- Snow/ice loads

It is essential that the designer of the system evaluate the system for these types of concerns and any other applicable concerns in design and protection by means such as pressure relief valves, burst discs, safety valves, shelters, grounding, fusing, etc., as required

**WARNING: Sponsler meters and accessories provide no means of relieving pressure. It must be provided somewhere else in the over all system.**

It is also the responsibility of the system owner to make sure personnel working on or around the equipment have been trained on all applicable concerns.

Sponsler components are designed to bolt to a platform or support. Never hang any components on the connecting piping or hang any external loads on any Sponsler component.

In addition, Sponsler components rely on internal spacing tolerances, which can degrade or fail from erosion, abrasion, or fouling. As such, it is important to evaluate the system and take measures to prevent this from happening. Proper filtration is recommended to assist in achieving this.

## SYSTEM INFORMATION

### System Considerations (continued)

The meter and accessories must remain full of product at all times. This will ensure the meter and accessories will have a longer service life.

An easy way to accomplish this is to put the meter and accessories in the line below the piping centerline. The meter and accessories should be installed in a bypass loop below the centerline with block valves upstream and down stream.

### Note

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*Any portion of the pipe system that might isolate or block flow must be provided with pressure relief to prevent damage from thermal expansion or overpressurization.*

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### Owner Responsibility

It is not possible to detail or warn against every possible scenario or event. It is the owner's responsibility to understand the fluids and systems into which Sponsler products will be installed. Personnel should be fully trained and be adequately warned and protected against inherent hazards if the system. They should have:

- Access to current MSDS sheets
- Access to appropriate protection equipment
- Access to appropriate tools
- Knowledge of location and proper safety equipment such as fire extinguishers
- Knowledge of safety procedures such as evacuation routes

Sponsler meters and accessories are often used with petroleum, LPG, and other liquids which may be explosive, extremely flammable, highly flammable, flammable, very toxic, toxic, oxidizing, harmful, or corrosive. Extreme situations may arise leading to severe injury or fatality if appropriate safety precautions are not followed.

**Consult with your local fire department and state and local regulations to make sure you are adequately prepared for the level of hazard present.** This may require special tools such as non-sparking screwdrivers, wrenches, etc., or restriction of power equipment.

**Make sure that all necessary safety precautions have been taken.** Provide for proper ventilation, temperature control, fire prevention, evacuation, and fire management.

**Read this manual** as well as all the literature provided in your owner's packet.

Contact Sponsler for technical guidance **in case of extraordinary service conditions.**

Contact Sponsler for technical guidance **in case of non-standard functions and characteristics of the products being required for service.**

## **PRODUCT SELECTION**

Sponsler components are metallurgically designed to be physically compatible with the given type of liquid. For information on fluid and component compatibility please contact factor.

A meter should not be used with a liquid different from the one specified. This could cause components to corrode and result in leaks. It is the end users responsibility to evaluate the suitability of the liquid with regard to safety of personnel, safety of compression, material compatibility, weight and density consideration, venting, draining, and disposal.

It is critical to select the right Sponsler product for the fluid and system into which the products will be installed. Contact Sponsler for technical guidance:

- For extraordinary service conditions
- In case of non-standard functions and characteristics of the products being required for service

# INSTALLATION

## Unpacking

1. The overall weight is marked on the outside of each box. Boxes and components inside the boxes should be handled with appropriate lifting methods for the weight involved
2. If you receive a cardboard carton, be careful removing staples (if applicable). They can be very sharp.
3. If you receive a larger product that may be bolted, be careful when unbolting it. The product may tip over without restraining bolts.
4. If you receive a number of smaller parts packed in a carton, be careful to identify and keep all parts. The foam is sealed within bags and cannot be mixed with the parts.
5. Do not lift products by any of the following:
  - a. Electrical junction boxes or wiring
  - b. Interconnection hoses

## Installation Considerations

To ensure proper meter and accessory installation, adhere to the following:

1. Flush the entire piping system prior to component installation to rid the system of all debris. Use a liquid compatible with the construction of Sponsler components.
2. Protective thread/flange caps are placed on all meter and accessory opening prior to shipment. These are to remain in place until attachment to piping is to occur.
3. Keep all external surfaces of the meter and accessories clean.
4. Position the Sponsler components with service in mind. Provide ample workspace. Supply support for Sponsler component mounting.
5. Securely bolt the Sponsler components to a platform or support. Never hang Sponsler component on the connecting piping or hang external loads on any Sponsler component.
6. Where applicable apply pipe compound to male threads only.
7. Install the Sponsler components in conformance with all applicable federal, state, local, construction, electrical, and safety codes.
8. Do not weld to the product or adapt the product in any way.
9. Do not expose any portion of an LPG system to pressures in excess of rated working pressure without an automatic safety valve to vent the overpressure discharge to a place of safety away from the operator and other people. It is the installer's responsibility to provide for venting safety and the hardware required to do so.
10. Do not expose the Sponsler component to excessive vibration. This can cause the connections to weaken and leak.

## Drawings

Drawings and photographs are included in the Installation & Parts Manuals for all products.

## INSTALLATION

### Putting Into Service

Prior to system start-up, ensure that:

1. The system components are properly secured
2. All connections are tight
3. All valves are in the close position

### Placing into operation

The system must be filled with liquid and be free of air and debris prior to start-up. The system may be filled by gravity or by the use of a pump.

Check to determine that all fittings and flanges are tight and liquid lines are closed.

1. Open the vapor line between the Sponsler components and the supply tank.
2. Using vapor pressure only, check each joint with a liquid soap solution to inspect for leaks.
3. When all joints have been checked and no leaks found, admit liquid slowly.
4. With the valve open between the supply tank and the Sponsler component, slowly open the valve located down stream of the Sponsler component until the meter's register begins to move indicating flow through the Sponsler component.
5. Once the product is flowing out of the end of the system, the valve can be opened to a flow rate, which does not exceed the maximum for which the meter is rated.

Refer to the manuals shipped with the Sponsler components for information specific to your components models.

## USE

Sponsor components are considered pressure accessories only. They are not suitable for preventing system damage or failure. They have not been protected against external or internal damage from system or environmental factors such as:

- Overpressurization (pumps size, thermal expansion, blockage discharge etc.)
- Hydraulic shock
- Excessive vibration
- Closed valves
- Overheating
- Temperature extremes outside of flowmeter ratings
- Excessive flow
- Pressure surges, pulsations
- Lightning
- Seismic load
- Fire/explosion-engulfment
- Snow/ice loads

### **IN THE EVENT OF A GAS LEAK**

#### **In the event of a large gas leak**

- Evacuate the area and notify the fire department.

#### **In the event of a small, contained gas leak**

- Stop the leak and prevent accidental ignition.
- Prevent the entrance of gas into other portions of the buildings. Some gases, such as LPG, seek lower levels, while other gases seek higher levels.
- Evacuate all people from the danger zone.
- See that the gas is dispersed before resuming business and operating motors.
- If in doubt, notify your local fire department.

### **IN THE EVENT OF A GAS FIRE**

#### **In the event of large fires or fires that are spreading**

- Evacuate the building and notify your local fire department.
- Stop the leakage only if you can safely reach the equipment.

#### **In the event of small, contained fires that you can safely control**

- Stop the leakage if you can safely reach the equipment.
- Use the appropriate extinguisher: Class B fire extinguisher, water, fog, etc., depending on the materials.
- *If in doubt, call your local fire department.*

## MAINTENANCE

**Keeping accurate maintenance records** can be an excellent tool in determining whether the frequency of inspection/testing is appropriate for a system. There are always hazards associated with maintenance, inspection and testing. As such, the involved personnel must be fully trained, take all necessary precautions, and comply with all local and national legislative requirements.

**The customer, owner, operator or partner** (whomever performs or contracts to perform the work) is responsible for the safety of personnel, equipment and the environment before, during and after the maintenance, inspection or testing.

**Prevent pipe strain or stress** from occurring when making meter or accessory repairs. Pipe strain and stress occurs when the pipes are not supported or are not aligned correctly to the Sponsler components. The weight of the pipes must always be supported independent of the Sponsler components. This means that the meter and accessories can easily be removed without affecting the pipes or the pipe alignment. Never leave any of the pipes hanging.

**Check with regulatory agency** that governs Weights & Measures in your area. Removing or changing any portion of the Sponsler component may require Weights & Measures recalibration.

**Do not mar or scratch** any of the precision machine surfaces by prying or sanding parts.

**When removing flanges with gaskets**, carefully scrap off the flange gaskets. Make sure that the flange surfaces have been cleaned. Discard the old flange gasket and install a new flange gasket. Never reuse old flange gaskets.

**In service inspection and testing** of the meter and accessories is required. Recommended levels of maintenance and inspection will vary depending on the fluids being metered. General inspection should be conducted annually at a minimum. This inspection should include an evaluation of the integrity of all pressure containing and safety related components and seals as well as the component mounting and integrity of the piping. In addition, a hydrostatic testing must be conducted at least once every 5 years at 1.5 times the pressure marked on the unit tag. If using a fluid other than water for the hydro test, it is the end user's responsibility to evaluate the suitability of the liquid with regard to safety of personnel, safety of compression, material compatibility, weight and density consideration, venting, draining, and disposal.

Even with water. The material compatibility should be considered with all parts in the system as well as with the final product.

### **Adjustments**

Refer to the product Installation & Operation Manual for instructions on proper adjustments.

## REMOVAL & DISPOSAL

### WARNING

#### Relieve Internal Pressure

All internal pressure must be relieved to zero pressure before disassembly or inspection of the meter or any of the meter accessories

Serious injury or death from fire or explosion could result from maintenance of an improperly depressurized and evacuated system

Sponsler meters and accessories are often used with petroleum, LPG, and other liquids which may be explosive, extremely flammable, highly flammable, flammable, very toxic, toxic, oxidizing, harmful, or corrosive. Extreme situations may arise leading to severe injury or fatality if appropriate safety precautions are not followed.

Consult with your local fire department and state and local codes to make sure that you are adequately prepared for level of hazard present. This may require special tools such as no sparking screwdrivers, wrenches, etc., or restriction of power equipment.

Make sure that all necessary safety precautions have been taken. Provide for proper ventilation, temperature control, fire prevention, and evacuation and fire management.

#### Removal of Sponsler Components

- Relieve internal pressure of the system prior to removal or disassembly of the Sponsler components
- Drain product from the Sponsler components. The drained fluid should be handled in accordance with all local, state, and federal guidelines.
- Remove all the Sponsler components from the system

#### Disposal

Dispose of any fluid according to the requirements of all state, local, and federal regulation



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