

Daniel™ Liquid Turbine Meters manual for PED

Installation and operating instructions specific to the Pressure
Equipment Directive

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Return Material Authorization (RMA)

A Return Material Authorization (RMA) number must be obtained prior to returning any equipment for any reason. Download the RMA form from the Support Services web page by selecting the link below.

<http://www2.emersonprocess.com/EN-US/BRANDS/DANIEL/SUPPORT-SERVICES/Pages/Support-Services.aspx>

Signal words and symbols

Pay special attention to the following signal words, safety alert symbols and statements:



Safety alert symbol

This is a safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER!

Danger indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING!

Warning indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION!

Caution indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Notice is used to address safety messages or practices not related to personal injury.

Important

Important is a statement the user needs to know and consider.

Tip

Tip provides information or suggestions for improved efficiency or best results.

Note

Note is “general by-the-way” content not essential to the main flow of information.

Important safety instructions

Daniel Measurement and Control, Inc. (Daniel) designs, manufactures and tests products to function within specific conditions. Because these products are sophisticated technical instruments, it is important that the owner and operation personnel must strictly adhere both to the information printed on the product and to all instructions provided in this manual prior to installation, operation, and maintenance.

Daniel also urges you to integrate this manual into your training and safety program.

BE SURE ALL PERSONNEL READ AND FOLLOW THE INSTRUCTIONS IN THIS MANUAL AND ALL NOTICES AND PRODUCT WARNINGS.

WARNING!

Failure to follow the installation, operation or maintenance instructions for a Daniel product could lead to serious injury or death from explosion or exposure to dangerous substances.

To reduce the risk:

- **Comply with all information on the product, in this manual, and in any local and national codes that apply to this product.**
- **Do not allow untrained personnel to work with this product.**
- **Use Daniel parts and work procedures specified in this manual.**

Product owners (Purchasers):

- Use the correct product for the environment and pressures present. See technical data or product specifications for limitations. If you are unsure, discuss your needs with your Daniel representative.
- Inform and train all personnel in the proper installation, operation, and maintenance of this product.
- To ensure safe and proper performance, only informed and trained personnel should install, operate, repair and maintain this product.
- Verify that this is the correct instruction manual for your Daniel product. If this is not the correct documentation, contact Daniel at 1-713-827-6314. You may also download the correct manual from: <http://www.daniel.com>.
- Save this instruction manual for future reference.
- If you resell or transfer this product, it is your responsibility to forward this instruction manual along with the product to the new owner or transferee.
- ALWAYS READ AND FOLLOW THE INSTALLATION, OPERATIONS, MAINTENANCE AND TROUBLESHOOTING MANUAL(S) AND ALL PRODUCT WARNINGS AND INSTRUCTIONS.
- Do not use this equipment for any purpose other than its intended service. This may result in property damage and/or serious personal injury or death.

Product operation (Personnel):

- To prevent personal injury, personnel must follow all instructions of this manual prior to and during operation of the product.
- Follow all warnings, cautions, and notices marked on, and supplied with, this product.
- System should be designed to avoid over pressure conditions or exceeding maximum safe flow rate if meter losses measurement.
- Verify that this is the correct instruction manual for your Daniel product. If this is not the correct documentation, contact Daniel at 1-713-827-6314. You may also download the correct manual from: <http://www.daniel.com>.
- Read and understand all instructions and operating procedures for this product.
- If you do not understand an instruction, or do not feel comfortable following the instructions, contact your Daniel representative for clarification or assistance.
- Install this product as specified in the INSTALLATION section of this manual per applicable local and national codes.
- Follow all instructions during the installation, operation, and maintenance of this product.
- Connect the product to the appropriate pressure and electrical sources when and where applicable. Never operate meter above the maximum working pressure stated on the nameplate.
- Ensure that all connections to pressure and electrical sources are secure prior to and during equipment operation.
- Use only replacement parts specified by Daniel. Unauthorized parts and procedures can affect this product's performance, safety, and invalidate the warranty. "Look-a-like" substitutions may result in deadly fire, explosion, release of toxic substances or improper operation.
- Save this instruction manual for future reference.

Notice

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Contents

Chapter 1	Installation and operating instructions specific to the PED	1
1.1	Purpose of this manual	1
1.2	Scope of this manual	1
1.3	Installation	1

1 Installation and operating instructions specific to the PED

Topics covered in this chapter:

- *Purpose of this manual*
- *Scope of this manual*
- *Installation*

1.1 Purpose of this manual

This document shall identify specific installation and operation instructions necessary to ensure compliance with the Essential Safety Requirements (ESR) of the European Economic Area Pressure Equipment Directive (PED) 2014/68/EU and the UK Pressure Equipment Regulations 1999 (SI 1999/2001).

1.2 Scope of this manual

This document applies to Daniel™ Liquid Turbine Meters designed by Emerson Process Management in Houston, Texas, USA, and manufactured by Emerson Process or an authorized agent.

1.3 Installation

The end user of the equipment shall be responsible for the following actions during the installation of the equipment to ensure compliance with the Essential Safety Requirements of the Directive and Regulations quoted in the Purpose section of this document. Relevant parts of the directive ESR are listed below.

Table 1-1: PED ESR compliance reference

PED ESR Reference	ESR requirement	Compliance requirement
2.3	<p>Provisions to ensure safe handling and operation</p> <p>The method of operation specified for pressure equipment must be such as to preclude any reasonably foreseen risk in operation of the equipment. Particular attention must be paid, where appropriate, to the following:</p>	

Table 1-1: PED ESR compliance reference (continued)

PED ESR Reference	ESR requirement	Compliance requirement
	<ul style="list-style-type: none"> • Devices to prevent physical access while pressure or a vacuum exists 	The end user shall ensure that the meters are installed in a properly designed system with access limitations in place if required.
	<ul style="list-style-type: none"> • Surface temperature 	It is the responsibility of the end user to assess the expected surface temperature in service, and if necessary take the necessary precautions to avoid personnel coming into contact with the equipment.
	<ul style="list-style-type: none"> • Decomposition of unstable fluids 	It is not envisaged that, for the designed service, the equipment shall come into contact with unstable fluids. However, the end user should assess the risk and take any steps considered necessary.
2.4	<p>Means of examination</p> <p>Pressure equipment must be designed and constructed, so that all necessary examinations to ensure safety can be carried out.</p>	Daniel Liquid Turbine Meters are designed so that all critical parts are contained within the meter body and cannot be examined while in service. The end user should refer to the operations and maintenance instructions supplied with each meter.
2.5	<p>Means of draining and venting</p> <p>To avoid harmful effects such as water hammer, vacuum collapse, corrosion and uncontrolled chemical reactions</p>	It is the responsibility of the end user to ensure that the meter is installed in a well-designed piping system to avoid such hazards.
2.6	<p>Corrosion or other chemical attack</p>	It is not expected that the process medium for which the meter is designed will give rise to severe corrosion problems. It is the end user's responsibility to monitor any change in the process medium that may cause concern.
2.7	<p>Wear</p>	It is not expected that the use of the meter for fluid metering will give rise to any abnormal wear problems. It is the responsibility of the end user to install any necessary filtration upstream of the meter to maintain the condition of the process medium.
2.10	<p>Protection against exceeding the allowable limits of the pressure equipment</p>	The meter must be installed in a well-designed piping system with adequate protection against excessive pressure.

Table 1-1: PED ESR compliance reference (continued)

PED ESR Reference	ESR requirement	Compliance requirement
2.12	External fire	The meter has no special accessories for fire damage limitation. It is the responsibility of the end user to provide adequate fire-fighting facilities on site.
7.3	Pressure limiting devices, particularly for pressure vessels	The meter is not a pressure vessel and has no integral pressure limiting devices. It is the responsibility of the end user to ensure that the meter is installed in a well-designed system so that momentary pressure surges are limited to under 10% of the meter's maximum allowable pressure.

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