



INSTALLATION AND MAINTENANCE INSTRUCTIONS

IM-5-227-US

August 2007

Digital Cycle Counter

Safety Information

Safe operation of these products can be guaranteed only if they are properly installed, commissioned, used and maintained by qualified personnel (see point 11 on this document) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment, must also be complied with.

1. Intended use

Referring to the Installation and Maintenance Instructions, Nameplate and Technical Information Sheet, check that the product is suitable for the intended use/application.

2. Access

Ensure safe access and if necessary a safe working platform (suitably guarded) before attempting to work on the product. Arrange suitable lifting gear if required

3. Lighting

Ensure adequate lighting, particularly where detailed or intricate work is required.

4. Hazardous liquids or gases in the pipeline

Consider what is in the pipeline or what may have been in the pipeline at some previous time. Consider; flammable materials, substances hazardous to health, extremes of temperature.

5. Hazardous environment around the product

Consider; explosion risk areas, lack of oxygen (e.g. tanks, pits), dangerous gases, extremes of temperature, hot surfaces, fire hazard (e.g. during welding), excessive noise, moving machinery.

6. The system

Consider the effect on the complete system of the work proposed. Will any proposed action (e.g. closing isolation valves, electrical isolation) put any other part of the system or any personnel at risk? Dangers might include isolation of vents or protective devices or the rendering ineffective of controls or alarms. Ensure isolation valves are turned on and off in a gradual way to avoid system shocks.

7. Pressure systems

Ensure that any pressure is isolated and safely vented to atmospheric pressure. Consider double isolation (double block and bleed) and the locking or labelling of closed valves. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

8. Temperature

Allow time for temperature to normalise after isolation to avoid danger of burns.

9. Tools and consumables

Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine Spirax Sarco replacement parts.

10. Protective clothing

Consider whether you and/or others in the vicinity require any protective clothing to protect against the hazards of, for example, chemicals, high/low temperature, radiation, noise, falling objects, and dangers to eyes and face.

11. Permits to work

All work must be carried out or be supervised by a suitably competent person.

Installation and operating personnel should be trained in the correct use of the product according to the Installation and Maintenance Instructions.

Where a formal 'permit to work' system is in force it must be complied with. Where there is no such system, it is recommended that a responsible person should know what work is going on and, where necessary, arrange to have an assistant whose primary responsibility is safety.

Post 'warning notices' if necessary.

12. Handling

Manual handling of large and/or heavy products may present a risk of injury. Lifting, pushing, pulling, carrying or supporting a load by bodily force can cause injury particularly to the back. You are advised to assess the risks taking into account the task, the individual, the load and the working environment and use the appropriate handling method depending on the circumstances of the work being done.

13. Residual hazards

In normal use the external surface of the product may be very hot. If used at the maximum permitted operating conditions the surface temperature of some products may reach temperatures in excess of 450°F. Many products are not self-draining. Take due care when dismantling or removing the product from an installation (refer to "Maintenance Instructions").

14. Freezing

Provision must be made to protect products which are not self draining against frost damage in environments where they may be exposed to temperatures below the freezing point.

15. Disposal

Unless otherwise stated in the Installation and Maintenance Instructions, this product is recyclable and no ecological hazard is anticipated with its disposal providing due care is taken.

16. Returning Products

Customers and stockists are advised that under EC Health, Safety and Environment Law, when returning products to Spirax Sarco they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk. This information must be provided in writing including Health and Safety data sheets relating to any substances identified as hazardous or potentially hazardous.

The monitoring of condensate return pump operation is an important activity for plant operations and maintenance personnel.

The use of pressure powered pumps equipped with a digital cycle counter provides the ability to monitor pump operation, schedule preventative maintenance and estimate the amount of condensate recovered.

Note: Operation of the counter requires the pump exhaust be vented to the atmosphere.

Specifications	
Enclosure	NEMA 1, 3R, 4, 12 IP 65 (watertight)
Counter	6 Digit LCD display – NEMA 4 Resettable (see instructions on back)
Sensor	All Stainless Steel components
Options	Auxillary set of SPST dry contacts for connection to Building Energy Management System. Contact ratings: 5 amp resistive 110/250VAC 3 amp inductive 28 VDC

Construction Materials

No.	Part	Material
1	Enclosure	Aluminum
2	Gasket	Neoprene
3	Sensor	Stainless Steel
4	Counter	Aluminum

Limiting Operating Conditions

Operating Temperature Range

Counter: 32 to 122°F 0 to 50°C

Sensor: -65 to 280°F -55 to 137°C

Maximum Sensor Pressure

PMO: 300 psig/21 barg

Minimum Back Pressure

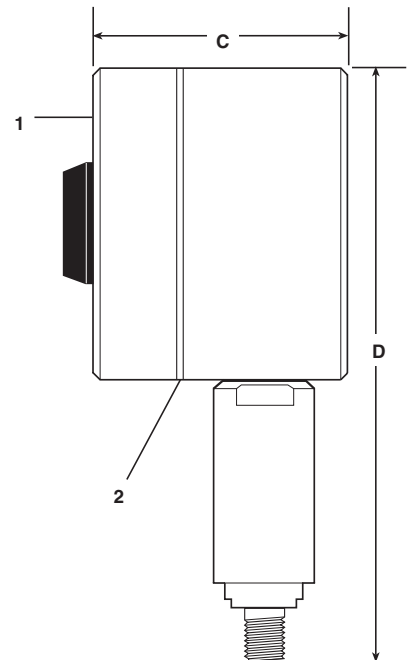
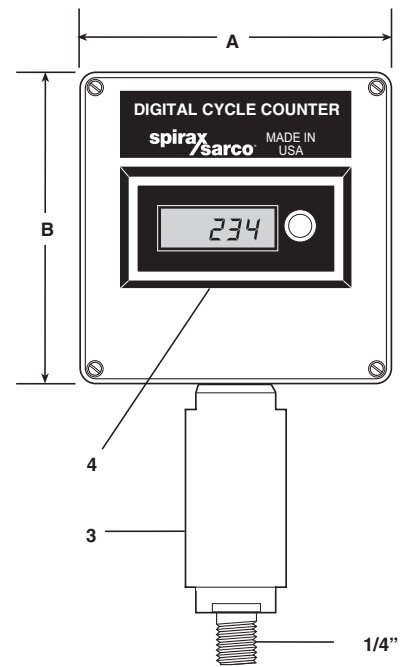
15 psig/1 barg

Pump Capacities

Model	Approximate Gallons/Cycle
PPEC	4.0
PPC	7.1
PPF	8.4
4" PPF-P	128

Dimensions (nominal) in inches and millimeters

A	B	C	D	Weight
3.15	3.15	2.37	6.37	1.6 lb
80	80	60	60	0.7kg



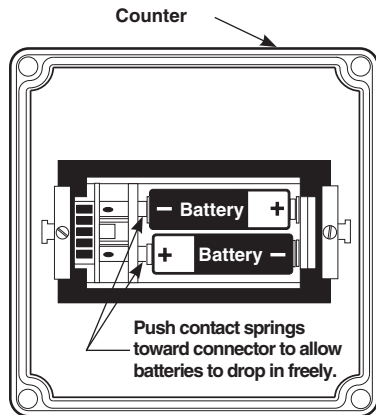
Installation

Mount the counter in a vertical position at a level convenient for reading. Use a length of pipe to elevate the counter as necessary. We recommend installing a 1/4" petcock valve for ease of servicing. The supplied pigtail protects the counter from overheat through direct contact with steam.

Caution: Before installation or any maintenance is performed, ensure that all steam, condensate, air or gas lines are closed and internal pressure is relieved to prevent injury.

Connection Size and Location	
Pump Model	Connection Size & Location
All PPC/PPF	1/2" NPT Pump on cover
PPEC	Special 1/2" NPT on top of pump body or 3/8" NPT*
PPF-P	(Gauge glass connection) 3/8" NPT* on Intermediate casing

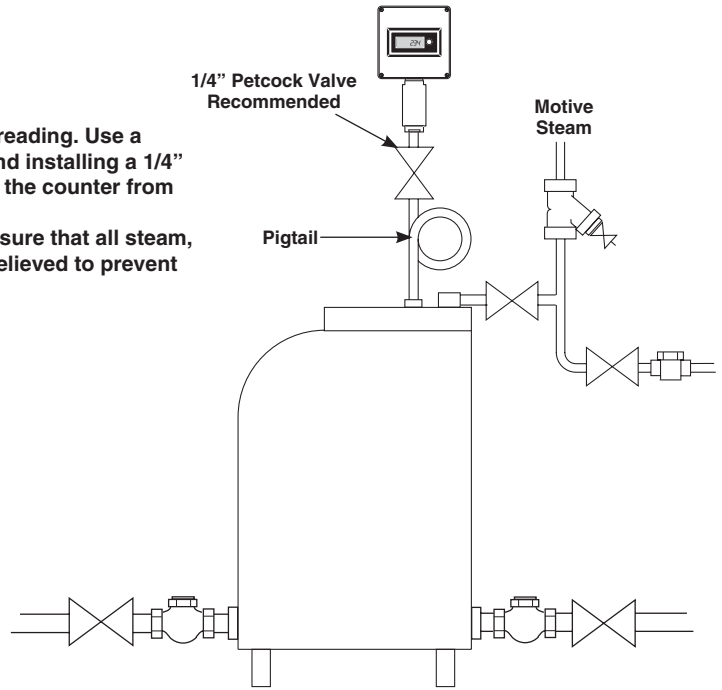
* These will require a pipe nipple, reducer bushing and a 90° elbow, all supplied by customer.



Battery Replacement

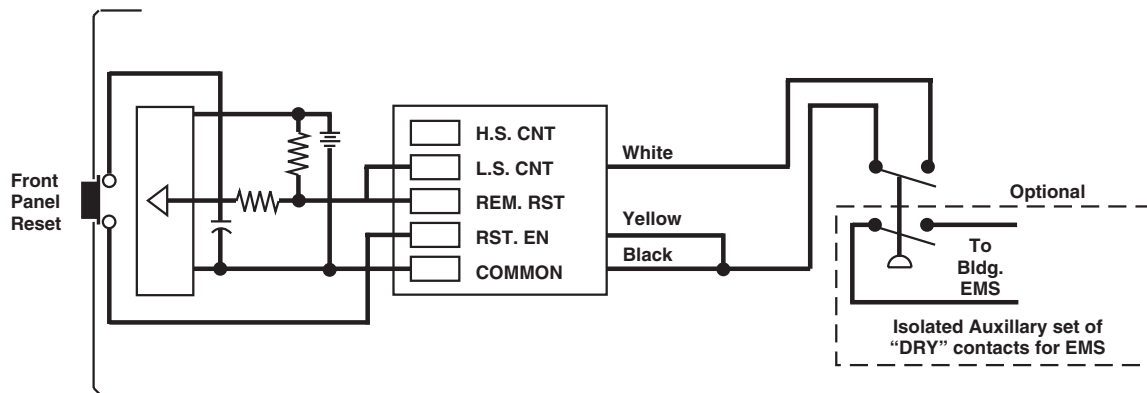
To replace the batteries in the counter, first remove the cover of the enclosure (see caution note above before servicing). Slide battery cover to the left until the right hand lip disengages. To reinstall battery cover insert left hand lips into case first, push cover to the left until right hand lip drops down and cover snaps back into place. Install batteries as shown, observing proper polarity. Recommended batteries are (quantity 2) "N" alkaline type.

Note: Push battery spring clips to the left toward connector, to completely free the batteries when removing or installing batteries.



Counter Reset

The unit is supplied with the front panel reset button deactivated. To activate, connect the Yellow wire from the RST. EN (Reset Enable) input to the Common, as shown below. To deactivate, remove the Yellow wire from the RST. EN input.



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