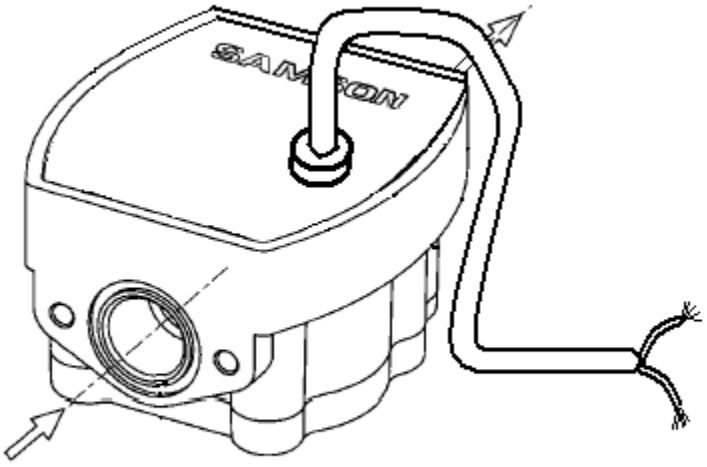
SAMSON Samson Corp. Swannanoa, NC-USA	**OVAL GEAR PULSE METER** **METRO OVAL DEL PULSO DEL ENGRANAJE** **MÈTRE OVALE D'IMPULSION DE VITESSE**	
	Parts and Technical Service guide Guía de servicio técnico y recambio Guide d'instructions et pièces de rechange	Ref.: **1071 100PPL**

Description/ Descripción/ Description

E

Inline Oval Gear Pulsing Meter for SAE 0 to 50 motor oils, SAE 80 to 240 gear oils, ethylene glycol solutions and methanol solutions. Provides 100 electronic pulses per Liter via an externally powered low voltage magnetically actuated reed switch. This meter is intended for use on the Samson Control Master system and other compatible systems. This Meter must be protected with a Pressure Relief Valve.



-Fig.A-

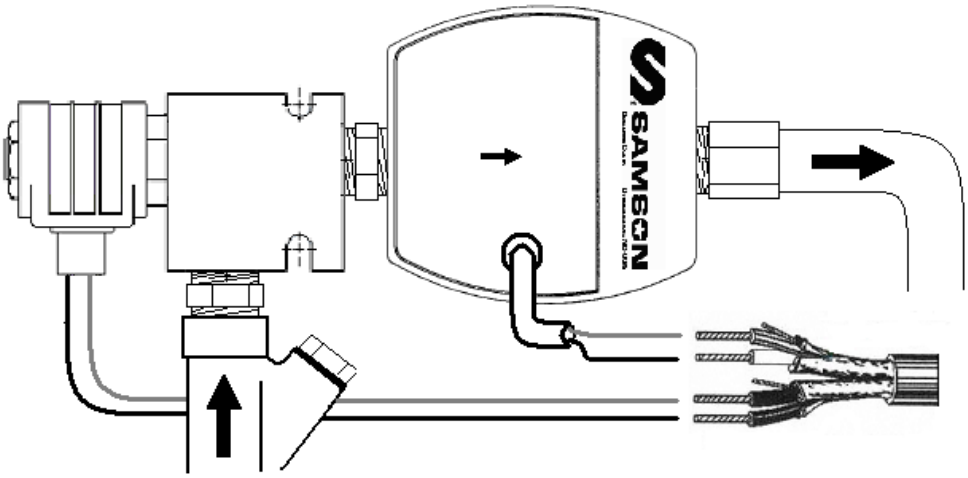
SP

Metro de pulsación del engranaje oval en línea para los aceite del motor del SAE 5 a 50, aceites del engranaje del SAE 80 a 240 y glicol de etileno. Proporciona 100 pulsos electrónicos por litro vía un bajo interruptor de láminas magnético actuado externamente accionado de la tensión. Este metro se piensa para el uso en el sistema del amo del control de Samson y otros sistemas compatibles. Este metro se debe proteger con una válvula de descarga de presión.

FR

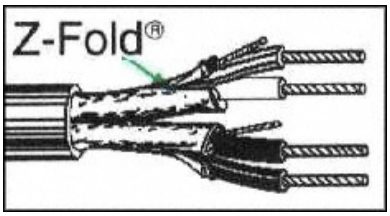
Mètre de palpitation de vitesse ovale intégrée pour des huiles de moteur de SAE 5 à 50, huiles de vitesse de SAE 80 à 240 et éthylène-glycol. Fournit 100 impulsions électroniques par litre par l'intermédiaire d'un bas commutateur tubulaire par magnétisme actionné extérieurement actionné de tension. Ce mètre est prévu pour l'usage sur le système de maître de commande de Samson et d'autres systèmes compatibles. Ce mètre doit être protégé avec une valve de décompression.

Installation - Operation/ Instalación – Modo de empleo/ Installation – Mode d'emploi



Installation - Operation/ Instalación – Modo de empleo/ Installation – Mode d'emploi

E



Install the Meter with a rigid connection immediately downstream of the Ball Valve, Y Strainer, and Solenoid at the dispense point. Connect the two wires to the proper terminals on the Control Master system Input/Output. Always install this meter on a system with a pressure relief/thermal expansion valve located at the pump.

Use the correct wire to connect back to the Control Master Input/Output unit (I/O). Samson specifies for this application Belden 9402 (two twisted shielded pairs – 20 gauge) or a factory approved direct equivalent. Use one of the pairs for the Pulse Meter and the other pair for the Solenoid at each dispense point.

SP

Instale el metro con una conexión rígida inmediatamente río abajo del solenoide en el punto del dispensar. Conecte los dos alambres con los terminales apropiados en la entrada-salida del sistema del amo del control. Instale siempre este metro en un sistema con una válvula de la extensión de la presión relief/thermal situada en la bomba. Utilice el alambre correcto para conectar de nuevo a la unidad de entrada-salida del amo del control (I/O). Samson especifica para este uso Belden 9402 (dos pares blindados torcidos – la galga 20) o una fábrica aprobó equivalente directo. El uso uno de los pares para el metro del pulso y el otro par para el solenoide en cada uno dispensa el punto.

FR

Installez le mètre avec un raccordement rigide immédiatement en aval de le solénoïde au point de distribution. Reliez les deux fils aux bornes appropriées sur l'entrée-sortie de système de maître de commande. Installez toujours ce mètre sur un système avec une valve d'expansion de la pression relief/thermal située à la pompe. Employez le fil correct pour se relier de nouveau à l'unité d'entrée-sortie de maître de commande (I/o). Samson indique pour cette application Belden 9402 (deux paires protégées torsadées – la mesure 20) ou une usine a approuvé l'équivalent direct. L'utilisation un des paires pour le mètre d'impulsion et l'autre paire pour le solénoïde à chacune distribuent le point.

Technical data/ Datos técnicos

Maximum Fluid Pressure	Presión de Fluido Máxima	Pression Du Liquide Maximum	70 bar (1000 psi)
Minimum Flow	Flujo Mínimo	Écoulement Minimum	0.5 l/min (.25 GPM)
Maximum Flow	Flujo Máximo	Écoulement Minimum	30 l/min (8 GPM)
Pulses per Liter	Pulsos por Litro	Impulsions par Litre	100
Accuracy	Exactitud	Exactitude	± 0.5%
Nominal Voltage	Voltaje Nominal	Tension Nominale	24 Volts
Maximum Amperage	Amperaje Máximo	Ampérage Maximum	250 Milliamps

Symptoms	Possible Reasons	Solutions
No Product flow at Dispense Point.	Y-Strainer clogged with debris.	De-pressurize the system and clean the screen.
	Fluid Solenoid clogged CLOSED with debris.	De-pressurize the system and clean the screen.
	Fluid Solenoid wired incorrectly.	Check the connections at the I/O Unit. Trace and confirm proper connections at the Solenoid.
	Control Handle inlet screen clogged	De-pressurize the system and clean the screen.
	Pump not operating properly.	Check air supply to pump.
		Bleed air from product piping.
		Diagnose pump using the proper troubleshooting manual.
	No product in bulk tank or drum.	Fill bulk tank or replace drum.
Product flow at Dispense Point will not stop.	Pre-Set amount too high.	Wait for timeout and Re-Authorize a dispense at the Keypad.
	Wiring from I/O to Impulse Meter.	Trace and Repair. Confirm that the Meter and the Solenoid are connected to the proper terminals at the I/O Unit.
	Wire connections at Impulse Meter	Check for tightness, continuity and that the Meter is connected to the correct terminals on the I/O Unit.
	Impulse Meter defective.	Consult the Special Diagnostic Procedures section of this Manual, Replace if defective.
	Fluid Solenoid clogged OPEN with debris.	De-pressurize the system and clean the valve parts and screen.
All Dispense Points always deliver too much product before shutting off.	Incorrect settings in PC Software.	95 Pulses = 1 Quart.
One or Some of the Dispense Points always delivers too much product.	Operator Error.	Check Pre-Set function - test delivery and re-train operator.
	Fluid Solenoid action impaired by debris.	De-pressurize the system and clean the valve parts and screen.
All Dispense Points always do not deliver enough product before shutting off.	Operator Error.	Check Pre-Set function - test delivery and re-train operator.
	Incorrect settings in PC Software.	95 Pulses = 1 Quart.
	Air leaks in Pump suction.	Reseal Pump suction tube.
	Foot valve on Pump missing, not sealed or defective.	Install, Replace, Reseal, or Repair.

Special Diagnostic Procedures

△ CAUTION! Follow the Troubleshooting guide for the Control Master System first to determine if there is a problem with the Impulse Meter before using this guide.

Some service problems that can occur are the fault of the meter, but it is important to diagnose the system as a whole to make sure that repair attempts are successful and timely.

The Impulse Meter can be tested for proper operation several ways.

First, as product is pumping through the system, check the continuity at the pigtail of the meter, with the pulse meter disconnected from the cabling. This test is most easily performed on a digital multi-meter using the beeping (sound ◗) function. There should be a steady stream of beeps. The beeps will be fast and close together, since the meter is pulsing 100 times for every Liter of fluid that passes through the oval gears.

Reconnect the cables to the Meter and the I/O unit and perform the same test at the terminals of the I/O board. Double-check the connections at the I/O board to confirm proper location of the cable to the correct terminals.

△ CAUTION! *Intermittent dispenses where the Control Master System reads correctly but the delivered amount is less than indicated can be caused by the lack of a foot valve on the pump (even with sufficient oil in the tank), or improperly sealed threads on the suction tube allowing air into the system.* **ALWAYS USE A FOOT VALVE ON THE PUMP SUCTION TUBE FOR ALL Control Master INSTALLATIONS!!!!**

Second, relieve system pressure and open the meter by removing the 4 5MM Allen screws. Check that the oval gears are properly engaged and rotating freely. Rotate the gears by hand and perform the tests indicated above to confirm proper operation.

Third, check the wires from the Impulse Meter back to the I/O Unit. Disconnect the wires from the I/O and the Meter. Twist the wires together at the Meter end; then check for continuity at the I/O end between the two wires. The multi-meter should read less than a couple of Ohms. Separate the wires and check again for continuity between the wires, there should be infinite resistance. Check for continuity between each of the wires and the building ground, the multi-meter should show infinite resistance. If any of these readings are incorrect, check the entire length of wire for missing insulation, breaks, or replace it entirely if it is old – it may have an intermittent failure.