



Custody transfer at Preemraff Lysekil in Sweden

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Preemraff Lysekil oil refinery in Sweden.

Customer profile

Taking its name from Lysekil, the nearby Swedish city, Preemraff Lysekil is one of two oil refineries operated by Preem Petroleum AB, Sweden. Preem is the largest oil company in Sweden, and along with the two refineries, the company owns and operates more than 500 service stations in Sweden.

Application

Since Sweden has no oil deposits of its own, crude oil is imported by tanker from various overseas sources included North Sea suppliers, Russia, the United Arab Emirates and other countries. About 65 percent of the refined products are exported, again by marine transport, to Northern Europe and the USA, with the rest remaining in Sweden.



Promass installation at Preemraff Lysekil on an existing jetty replacing an old turbine meter and filter.



SPSE (Société du Pipeline Sud Européen) prover used for the oil calibration of Promass Coriolis mass flow meters

making replacement very easy and limiting additional costs for installation.

Benefits of Promass Coriolis mass flow measurement at Preemraff

• Loading the right mass

Promass provides a direct and highly accurate mass measurement for loading and off loading. This is due to the fact that all Endress+Hauser mass flow meters are calibrated on an accredited test rig with hydrocarbons that have the same characteristics as the hydrocarbons that are measured by the flow meters in customers' applications. Promass is also calibrated and approved by NMI for bidirectional use, meaning that Promass can be used for loading and off loading in the same set up.



Installation of tandem Promass meters on new Preemraff jetty



• Reducing time in the harbor

As soon as the tanker enters the jetty, loading or off loading can begin. When finished, the mass measurement is immediately available and the customer can, in turn, immediately produce the "Bill of loading". As a result, the amount of time the tanker is in the harbor is greatly reduced. Also, the faster the tanker leaves, the more hours available for other tankers at the harbor.



OMNI flow computer

• Reducing the number of claims
Every loading contract includes a paragraph about the difference between onshore figures and tanker figures. Typically, a difference of only 0.3 % is acceptable. If the discrepancy is larger, the buyer can make a claim which can often delay payment.

• None-stop, continuous operation – no need for re-proving on site
Integrated advanced diagnostics allow for constant monitoring of the long-term stability of the meter. For this reason, no on site

Flow Level Pressure

proving station is required. When there's a need for online proving, the Promass Coriolis, with high turn down of up to 1:1000, allows on-line proving with small size and affordable piston provers on site, even for high flow rates. A metering station with Coriolis requires no straight runs and no flow conditioner or strainer, allowing for minimum space requirements and maximum cost savings. The small size and weight requirements allow for a full size metering station with an integrated prover to be positioned even on a small size jetty. Therefore, bidirectional proving can be carried out during ship loading and off loading.

- Life cycle cost savings

Promass Coriolis mass flow meters operate maintenance free. A flow metering station based on Promass involves absolutely no moving parts, thus no wear and tear and no maintenance required.

Along with the Promass Coriolis mass flow meters, other components were supplied to Preemraff to complete the overall solution, including flow computers, servers, switchgear cabinets, external displays for remote monitoring of the meters, and oil calibration.

More information

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SCADA visualization of flow calculations

New CD Catalogue Puts Latest Flow & Level Measurement Information in the Palm of Your Hand

FCI (USA) has released its updated 2007 Flow Meter and Level Measurement Product and Services Catalogue in CD ROM format. For the ninth year in a row, FCI is packing the new CD with the latest and most helpful information available to specify the right flow, level or temperature meter for improving a plant process control line or increasing OEM equipment performance. FCI has compiled technical information, applications and case studies developed from over 40 years of solving the flow and level challenges of the process and plant engineering community.

FCI's CD Catalog Release 10.0, available by visiting the company's web site, contains valuable gas and fluid flow problem-solving applications data. In addition to providing thermal and Coriolis mass flow meter technology and product explanations, detailed case studies and product user manuals and guides, the new CD includes the popular, comprehensive FAQ Library.

FCI's products are requested by name in some of the world's most demanding environments for flow instrumentation. They are recognized for their precision accuracy and repeatability in harsh conditions, where their high performance ensures both end-product quality and operational safety. The company offers a broad range of solutions from off-the-shelf devices to custom-engineered systems.

Flow meters from FCI are available with either Coriolis or thermal dispersion mass flow sensors. FCI's advanced flow meters combine precision flow measurement accuracy with a rugged design that is compatible with caustic, corrosive, humid and high temperature environments. They are highly reliable, easy to install, require virtually no maintenance and are designed for long-life.

FCI flow switches feature an advanced no-moving parts thermal dispersion flow sensor that makes them ideal for a wide range of point-level process applications. Their versatile design also allows them to measure flow or level or temperature. The company's NuTec® flow switch is designed with a unique non-contacting flow element that completely separates the sensor from the process media, which makes it ideal in sanitary flow processes common to the food/beverage and pharmaceutical industries.

Custom designed flow and level sensors for OEM applications from FCI are ideal for use in a wide range of industrial equipment where monitoring, high/low alarming, metering, switching and totalizing are required. Suitable for air, liquid or gas applications, these devices feature advanced micro-electronics for direct mass flow measurement in a rugged, no-moving parts design that offers exceptionally high reliability and long-life.

Flow conditioners developed by FCI's Vortab Company provide a low pressure loss solution to correcting flow profile irregularities that affect the accuracy of flow instrumentation. In today's crowded plants, elbows, valves, blowers and other devices in the pipeline can disrupt flowing media, which reduces measurement accuracy. Vortab® flow conditioners eliminate these flow disturbances to ensure accurate data.

Mass Coriolis Product Line Expanded

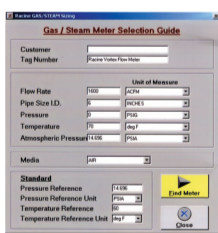


AW-Lake Company (USA) has expanded the product line of C-Flow Mass Coriolis flow meters with the introduction of more sizes and a new meter-mounted, explosion-proof transmitter. These changes open the C-Flow product line up for use across many industries and applications where hazardous environments are common.

The C-Flow line now features meters that have process connections from 1/2 inch to 3 inch and that measure mass flow rates as low as 11 pounds per hour to as high as 130,000 pounds per hour.

The C-Flow line of mass coriolis flow meters are a joint manufacturing effort of AW-Lake Company and its sister company, KEM Küppers in Karlsfeld and Koetting, Germany. The AW-Lake and KEM engineers have superb application knowledge and extensive flow meter technology experience, which together with our partnership approach to every client, provide a hands-on integration process into production. AW-Lake Company's C-Flow Mass Coriolis flow meters provide an economic option to a normally very expensive technology.

Software Program Assists in Flow Meter Selection



Racine Vortex (USA) offers a software that will help select the proper flow meter. The sizing utility program accounts for system pressure and temperature, as well as media density, viscosity, and specific gravity. It can be downloaded at no charge from their website.

There are many variations in the Racine Vortex product line. The sizing software allows customers to enter their application parameters and then it calculates the meter types and sizes that will be most suitable. The user may select from a complete list of Metric and English engineering units, using default or customised reference standards for pressure and temperature.

Racine Vortex manufactures the RWG and RWBG-wafer gas meters; RNG-insertion gas meter; RWL-wafer liquid meter; RNL-insertion liquid meter; and the RPL-in-line plastic liquid meter. These products utilise the smallest strut (or "bluff bar") in the industry, which allows for high sensitivity, superior performance at very low flow rates, large turndown ratios and low pressure drop.

New Level Transmitter with Magnetostrictive Accuracy to the Drop!

The new Jupiter® 200 from Magnetrol International (Belgium) is the safest magnetostrictive liquid level transmitter on the market today. With a SFF of > 90%, the Jupiter® is as suitable for SIL 2 instrumented loops as 1oo1 devices and exceeds the performance of any other equivalent device. Jupiter takes highly accurate (0,4mm) and repeatable measurements (0,13mm), over a measuring range of 5,7m.

The Jupiter® is a loop powered level transmitter and measures simultaneously both the top level and the liquid-liquid interface level. The end user can easily select, via the Eclipse® look-alike menu, which primary variable should control the loop signal. The use of a Moore HIM® loop card enables the user to have both top level and liquid-liquid interface available as an analogue output.

The Jupiter® 200 series is available as a direct insertion model, mounted directly on the vessel, or inside a stillwell, bridle or bypass cage. As a direct insertion model, the unit is only suitable for clean liquids and handles a maximum of +260°C process temperature.



The external mount version of the Jupiter® 200, clamps on to Magnetrol's Atlas® magnetic level indicator, which contains a float with vertical magnets. As an external mount model, the Jupiter® handles any type of liquid incl. slurries and handles process temperatures up to +455°C. The design pressure ranges from full vacuum up to 26.2 bar @ +40°C (direct insertion model). External mount models are not affected by any process condition (viscosity, density, temperature, pressure...) but rely on the float limits of the MLI on which the unit is mounted.

The Jupiter Atlas® 200 performs a continuous diagnosis on the float integrity, electronic circuitry, guards the ambient temperature of the electronics and records any diagnostic message. The Jupiter Atlas® 200 is compatible with Hart/AMS, PACTware® and Foundation Fieldbus® communication protocols.