

Application note



Steel production plant

TransPort PT878GC portable gas clamp-on tracks oxygen main feed line flow to the steel plant from the oxygen production facility

Problem

An iron and steel company in Turkey built a new oxygen manufacturing plant (OMP) for their utility gas requirements. In this new plant, there are many flow measurement points, but the most critical one is the output of the OMP to the steel plant. The OMP doesn't have any PLC or SCADA system so one technician checks totalizer value daily at the outlet and records it into their system. Just a few days after the startup, something was suspect with the results since the totalizer output was much higher than OMP capacity. This led to an issue for the steel plant operations team because they couldn't reconcile their daily oxygen consumption rate. The OMP output flow meter is a vortex and the meter's vendor couldn't find the reason for this even after visiting the site and checking all diagnostics. The vendor called our partner, Enotek, to help with the situation.

Benefits:

- Large turndown ratio to cover low to high flow
- Bi-directional flow capability thru the same meter
- Strong reputation in steam flow measurement
- Proven reliability built from previous projects
- Strong local support

Pipe material	Carbon steel, diameter: 8 in (200 mm), thickness: schedule 40 (7.11 mm)
Medium	Oxygen
Pressure	9 to 12 barg (130 to 174 psig)
Temperature	25 to 35°C (77 to 95°F)
Velocity	0 to 18 m/s (0 to 59 ft/s)



Solution

After collecting process data, it appeared that clamp-on gas measurement was well suited for the application. A TransPort PT878GC trial was suggested to compare both meter readings and to start the investigation.

With plenty of available straight runs and enough pressure, the PT878GC setup was quick and easy, and the comparison started. Under normal flow conditions, both meters were very nicely tracking with less than 1% difference. But when the process was changing, the vortex meter had erratic readings while our PT878GC kept stable as the customer expected. Enotek suggested that the customer check the vortex grounding and that solved the issue. We now have a happy customer.



C-RS 401 transducer installation on the penstock