Druck
a Baker Hughes business

Application story

Reducing risks and improving operational performance in gas distribution

A globally recognised gas supplier turned to Druck for improving the operational performance in gas distribution.

Industry supplied
Oil and gas

Application
Gas distribution

Product/service
DPS5000 I^2C

Customer type
Globally recognized integrated gas supplier

Druck's customer's challenge

Gas explosions are relatively rare and can be prevented by accurate supervision of gas distribution networks.

A Gas Distribution Network (GDN) is a transportation system that provides service to residential, commercial, and industrial customers. The typical source of the network's gas supply comes from pipelines that operate at a high pressure. The high elevated pressure allows the GDN to move large masses of gas across countries. For delivery to residential, commercial, and industrial customers, the pressure must be reduced to a lower pressure level that the customer is able to receive.

Gas Regulators (GR), are used to maintain constant, reduced pressure at the outlet and are extensively used within the Natural Gas industry. The GR needs to monitor the downstream pressure within certain limits to avoid damaging equipment and in extreme circumstances causing an explosion.

These mechanical regulators are highly reliable machines; however, failures could potentially occur due to a number of reasons such as physical damage, equipment malfunction and the presence of foreign material in the gas stream.

This low failure rate was unacceptable for Druck's customer in such a potentially dangerous application where a higher degree of certainty against gas regulator failure was required.

Druck's customer's solution

Druck's customer's solution to this was to put remote pressure monitoring devices downstream of the regulator. These are battery powered and connected to the cell phone network. If the pressure goes outside of preset limits the device sends a message to an engineer who visits the site to check operation and if necessary, make the site safe. The performance of the regulator is also recorded and transmitted intermittently, with certain telltale behaviors signaling the need for maintenance. Any alarm or failure must be dealt with immediately hence the correct operation of the pressure sensor is critical, not only to avoiding a potentially dangerous event going unnoticed, but also the wasted time and money spent on a call out to an engineer to attend to a false alarm situation in the event of a poorly performing pressure sensor.

Historically one of the most common causes for a false alarm is an incorrect reading from the pressure sensor when operating at very low ambient temperatures. This puts a burden of cost onto the end user who must send out highly trained engineers (often at night) only to find the regulator working within specification and a false reading from the checking pressure sensor.

Druck's added value

The introduction of Druck's DPS5000 I²C digital pressure sensor in this application for Druck's customer has provided significant benefits:

Druck's DPS5000 I²C digital pressure sensor offers a high level of accuracy over a wide operating temperature, even down to -40 °C where most pressure sensors would find it difficult to remain accurate.

Using Druck's DPS5000 I²C digital pressure sensor as a communication protocol makes it easy for an electronics design engineer to interface to a sensor in a microprocessor-based system, as well as making it possible for the sensor to turn itself off when not required thus reducing power consumption and extending battery change intervals.

The fully welded stainless steel pressure port and intrinsically safe certification makes it easy for the customer to integrate Druck's DPS5000 I²C digital pressure sensor safely into a gas monitoring environment. By using injection molding originally designed for under water level applications, the sensors can work reliably outside in all weather conditions.

Finally, the excellent stability of the module (which is manufactured in-house by Druck and forms a key component of the pressure sensor's construction) allows accuracy to be maintained over a long period of time, allowing extensions to the recalibration interval, thus providing the customer with financial savings associated with recalibration costs and the reduction of downtime associated with frequent recalibration of less accurate and stable pressure sensors.

Find out more about Druck's pressure sensors and OEM custom sensor solutions: https://www.bakerhughesds.com/sites/g/files/cozyhq596/files/2019-07/oem_-_expertise_partnership_v2.pdf

View the DPS5000 12C datasheet here: View the DPS5000 12C datasheet

Find out more information about Druck on LinkedIn here: https://www.linkedin.com/company/druckcompany/?viewAsMember=true

Per avere più informazioni
CONTATTACI

EP srl
41124 Modena
Via S. Faustino, 155/P

Tel. +39 059 35 76 00
www.epsas.it
ep.ma@epsas.it

Baker Hughes

Copyright 2021 Baker Hughes Company. All rights reserved.