



HIRSCHMANN

A **BELDEN** BRAND

Fiber Optic Fieldbus Systems in Oil Production.

Oil / Gas

Recently developed oil fields in the United Arab Emirates networked with highly available fiber optic field buses.

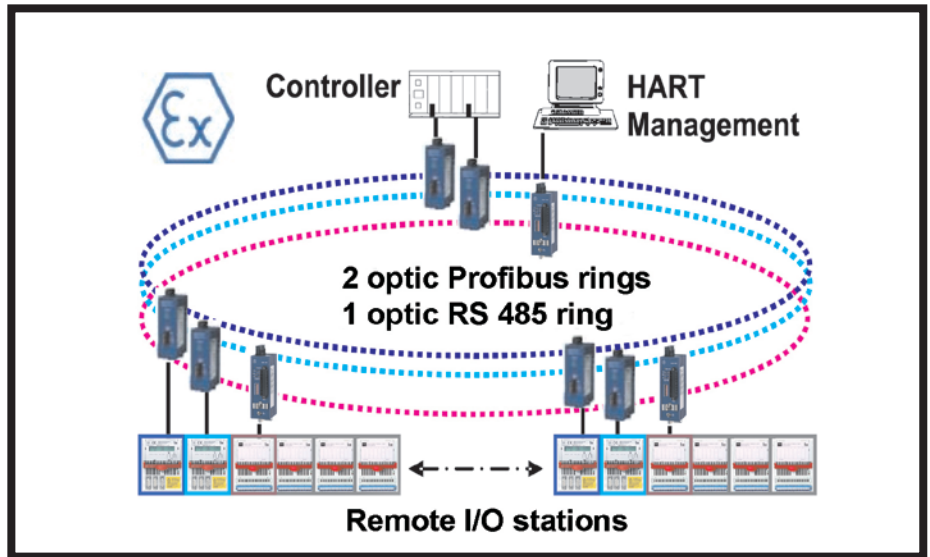


Production has recently started at two new oilfields 50km southwest of Abu Dhabi City, Rumaitha in the countries interior and Al Dabb'iya on the coast. The daily production capacity of the fields is about 100,000 barrels. The facilities for producing, storing and metering the crude oil have been in operation since late 2005. Operating safety is paramount here, so the process control system has been

designed with full redundancy, and data is transmitted between the controllers and the remote I/O stations via fail-safe, redundant optical fibers. The danger of explosion that is inherent in such facilities presents a particular challenge. This challenge must be met with ATEX approved devices that are also capable of withstanding high ambient temperatures.

STAHL

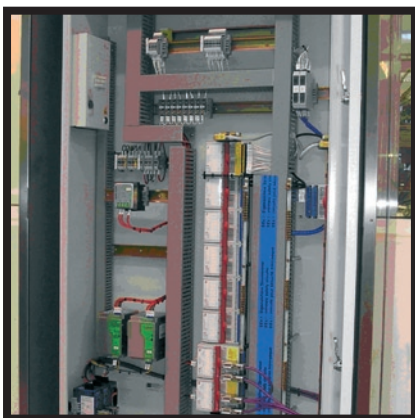




OZD Profi



OZD 485



Remote I/O Station

Project details

The process control system designed as a redundant system to specifically meet the customer's demand for high process data availability. The process control units constructed by Honeywell provide a primary and a secondary Profibus DP interface with the remote I/O stations. HART information is recorded via an independent service bus using an RS 485 interface. Optical cables and redundant optical rings ensure an exceptionally high level of operating safety. The cabinets installed in explosion protection zone 2 include devices for properly isolating the intrinsically safe signals that are primarily used here for transmitting to zone 1 and zone 0. The power supplies for the remote I/O stations are designed redundantly. The cabinets have been engineered to prevent heat accumulation and they are also equipped with solar protection means. Otherwise, it would not be possible to keep the electronic components in the cabinet sufficiently cool in desert conditions.

Project parameters

- Profibus DP and HART communication
- 15 km transmission length
- 2600 process signals
- 72 remote I/O stations
- 176 OZD Profi 12M G12
- 26 OZD Profi 12M G12-1300
- 88 OZD 485 G12
- 13 OZD 485 G12-1300

Requirements

- High availability of the process control system.
- 85°C solar temperature
- 52°C air temperature
- 95% maximum air humidity
- Explosion protection zones 2 and 1

Solution

- Redundant control stations with two Profibus interfaces
- Redundant communication via optical Profibus DP rings
- Communication with HART Management System
- Switch cabinet designed for high operating temperature
- Devices ATEX-approved

Why Hirschmann™?

- Fiber optic converter for Profibus DP
- Fiber optic converter for HART via RS 485
- Designs for long and medium segments
- Redundancy with optical rings
- ATEX approvals received