

Changxing Glass Realizes Faster Startup Using Emerson's PlantWeb® Architecture with Foundation™ Fieldbus Technology



RESULTS

- 20 days reduction of startup and commissioning
- 50% reduction of labor for start-up and commissioning
- 80% reduction of temperature instruments and 60% reduction of cables
- 90% installation problems can be detected and fixed early before the startup



APPLICATION

Changxing Glass, operated in May of 2008, is a subsidiary company of Zhejiang Glass Co., Ltd. It equips a production line with the capacity of 800t glass per day, which is one of the largest and the most advanced float glass production line in China.

CUSTOMER

Zhejiang Glass Company Limited is a private-owned and Hong Kong listed company. It contributes to high quality float glass production. Currently, they have 10 glass production lines for float glass with high quality which meet the international standard and the aggregate daily melting capacity of 3700 tons. They can produce 1.1-1.9mm of high quality float glass with various specifications. The production scale of Zhejiang Glass is placed the first in Zhejiang province and the 3rd in China. With its leading economic efficiency in domestic glass industry, it becomes the model of China private-owned companies.

CHALLENGE

Changxing Glass needed an advanced automation solution to ensure a quick startup with no risk and a full capacity reliable operation. They selected Foundation fieldbus technology and AMS Suite: Intelligent Device Manager to realize improved efficiency, lower workload and faster startup in an extreme high temperature environment.



“By utilizing the Foundation fieldbus technology, we realized 15% reduction in field devices and 60% savings in cable installation. We start-up 20 days ahead of schedule.”

Li Zhong
Project Leader of Changxing Project

SOLUTION

Emerson provided Foundation fieldbus technology-based PlantWeb digital plant architecture to Changxing Glass, allowing the customer to get great benefits from this advanced technology. The Emerson offerings provided as a part of PlantWeb architecture included:

- DeltaV™ process control system
- AMS Suite: Intelligent Device Manager
- Rosemount® HART transmitters
- Rosemount® 848 temperature transmitters(Ff)
- Fisher® valves with DVC6000 (Ff)
- Micro Motion® mass flowmeters (Ff)

Started with a small scale of Foundation fieldbus unit, Zhejiang Glass was fully realized the advantages, economics and reliabilities of Ff technologies, as well as the leading competitiveness of Emerson. That's why they chose PlantWeb architecture for the Changxing project to achieve their automation goal.

Comparing to the traditional architecture, Emerson's PlantWeb automation solution saved 30% of the installation and commissioning time, and reduced 20% of the hardware which included the devices, cables, control I/Os, and terminal blocks. The customer was further benefited from Ff technology to lower the capital and engineering cost.

35 Rosemount 848T eight-input temperature transmitters with Ff were installed in 5 H1 segments to monitor 210 measurement points of glass kiln which allowed the customer to decrease the materials, engineering, and commissioning cost by 50%. Compared with the traditional solution, the total number of device could be reduced by 15%.

The AMS Suite: Intelligent Device Manager played an important role in minimizing the risk during the startup. It enabled the plant staff to detect the field failure in the control room and respond faster. About 90% of the installation problems were fixed before the startup which allowed the operation 20 days ahead of schedule.

To be a model of private-owned company, Zhejiang Glass Company Limited fully utilizes the most advanced technology to strength the company competitiveness. The customer will again choose Emerson's PlantWeb digital architecture for the automation of their new product line.



“The most advantages of Ff technology is to detect the field devices in the control room, which reduces the round trip to the kiln. ”

Zuo Yufeng
DCS Engineer

“The digital communication of Ff avoids the interference and drifting which may occur with the traditional technology, hence, the measurement accuracy was improved tremendously.”

Gao Cai
Electric and Instrumentation Team Leader