

OXYBOOST™ Flow Control Skid.

Measurement and control system for safe oxygen metering.



Numerous oxidation processes in refineries, in petrochemical plants and in base chemical production use ambient air as an oxidant. In refineries, these are, for example, the Claus process and the FCC process. For petrochemical plants, sulfuric acid regeneration, the oxidation of paraxylene to terephthalic acid, of toluene to benzoic acid and of butane to butanediol can be mentioned as examples. Enriching the oxidation air requires careful measurement and control. Done successfully, it can increase the capacity of existing plants and make plant operation more flexible all while reducing the amount of waste gas.

Description

Depending on the amount of process air, the Messer OXYBOOST™ Flow Control Skid and equipment meters oxygen into the process air until the desired concentration is reached. For the injection itself, a separate, customized OXYBOOST oxygen injector is installed.

Safety

The OXYBOOST Flow Control Skid units are approved for operation in Class I, Division 2. They are designed according to U.S. National Electrical Code (NEC), NFPA 70. The finished parts are made of stainless steel 1.4571 or similar material. The control cabinet may not be installed in the classified area.

To ensure a safe operation, the “block and bleed” concept is applied in case of a shutdown. When a shutdown occurs, a quick-action valve at the inlet closes; and the control valve at the outlet is closed as well. The pipe section between these two valves is vented through an open/close valve. This ensures that the gas can neither flow from the air duct nor from the oxygen tank into the other area.

Performance

Depending on the oxygen demand, OXYBOOST Flow Control Skid units with an oxygen flow rate of 1,900 to 190,000 SCFH are available.

Automation

The unit is fully automated with its own PLC and touch panel display, and alternatively can be operated by tying into an existing control panel. It is possible to switch between manual and automatic operation. For a permanent installation it is recommended to substitute the control cabinet by connection to the customers distributed control system (DCS).

Technical Data

- Flow rate 1,900 to 190,000 SCFH
- Allowable operating pressure 160 psig

System

The entire OXYBOOST system consists of an oxygen source (e.g. a LOX tank with liquid oxygen), vaporizers, the OXYBOOST Flow Control Skid with the control unit and an OXYBOOST oxygen injector. The system is cleaned for oxygen service using Messer Standards, which meet or exceed CGA cleaning procedures.

Characteristics

- Safe and reliable oxygen metering
- Low required space
- Switching between manual and automatic operation

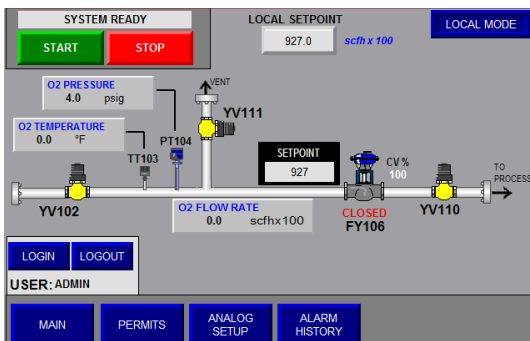
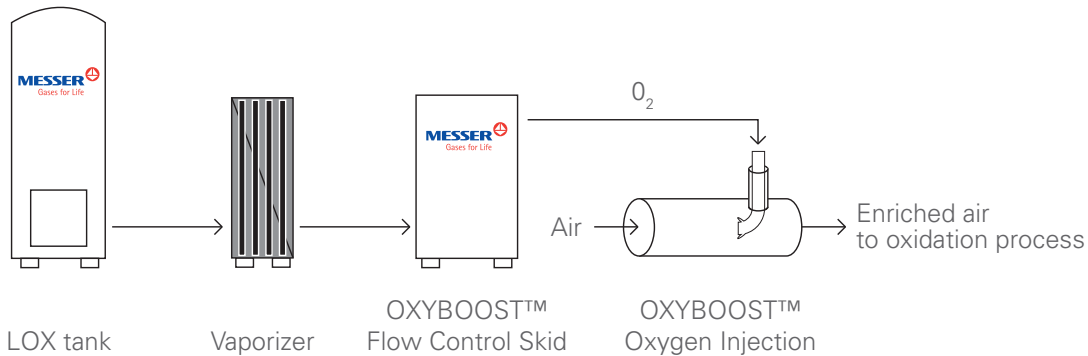
- Automated process flow with pressure and temperature compensation
- Intrinsically safe operation will automatically shut down oxygen flow if temperature, pressure or air flow fall out of pre-set parameters

Range of services

- Experimental analyses with the OXYBOOST Flow Control Skid at the customer's site
- Unit for rent for customer tests
- Layout design for the OXYBOOST Flow Control Skid and OXYBOOST oxygen injector
- P&ID
- Project planning
- Fabrication
- Documentation
- Start-up
- Oxygen supply

Service and know-how

With decades of experience in gas supply, cooling technology and plant engineering, we facilitate an efficient and individual project development. High-performance process simulation programs as well as substance databases ensure an optimal design and the safe operation of the facility as well as the efficient oxygen application.



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