

### Sample calculation

- Boiler capacity 5 MW
- Average use time 4000 h/year
- Average capacity 60 %
- Price of light fuel oil 0,55 €/l
- Price of natural gas 0,30 €/m<sup>3</sup>n
- Price of electricity 0,10 €/kWh

### 1. Effect of O<sub>2</sub> control on the combustion efficiency

In a traditional burner, the O<sub>2</sub> level of flue gases is usually adjusted to about 4 %. When using WD200, a 2 % O<sub>2</sub> level can be reached. Two percent reduction in O<sub>2</sub> level means 1 % rise in efficiency.

The resulting annual savings are:

- with light fuel oil 6,550 €
- with natural gas 3,600 €

### 2. Effect of VSD in fan motor on electricity consumption

Burner without VSD:

- electricity consumption 31,600 kWh/year
- cost 3,160 €

Burner equipped with VSD:

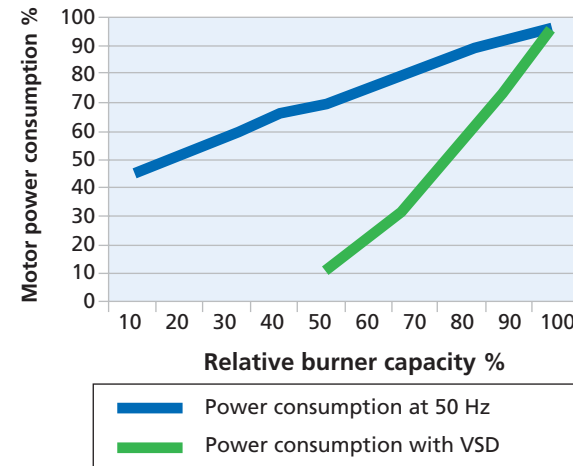
- electricity consumption 9,600 kWh/year
- cost 960 €

Savings/year 3,160 € - 960 € = 2,200 €

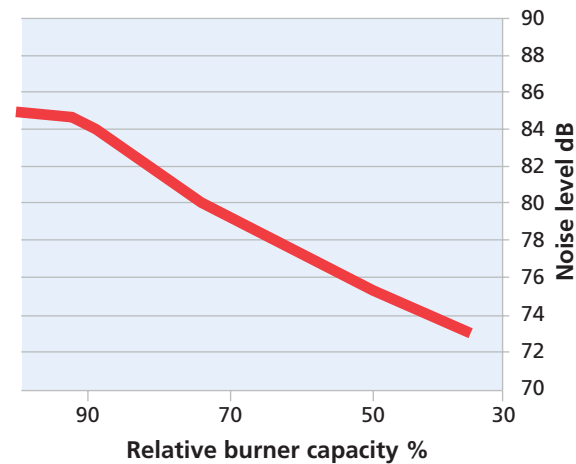
### 3. When using O<sub>2</sub> control and VSD in fan motor the annual cost savings are:

- with light fuel oil 8,750 €
- with natural gas 5,800 €

Motor power consumption in 5 MW burner



Noise level with VSD



### THE CONTENTS OF DELIVERY

Oilon WiseDrive system includes:

	WD100	WD200
Control unit	•	•
Operating panel	•	•
Servomotor(s) for oil regulator/gas butterfly valve	•	•
Servomotor for air dampers	•	•
Servomotor for combustion head regulation	o	o
O <sub>2</sub> sensor + O <sub>2</sub> module + flue gas collector	o	•
Temperature sensor for measuring flue gas temperature	o	o
Temperature sensor for measuring air temperature	o	o
VSD + rotation speed sensor	o	o
Fuel flow meters	o	o
CAN Bus cable	•	•

- Standard delivery
- o option



**Oilon WiseDrive is a microprocessor-based burner control and safety system. Middle-sized and large burners can be equipped with the WiseDrive system.**

## Oilon WiseDrive – energy-efficient and environmentally friendly solution

### With the WiseDrive system you save energy!

In the WiseDrive the mechanical fuel/air ratio control system has been replaced by electronic control system. Electronic fuel/air ratio control of the burner brings the benefits of better combustion efficiency and lower flue gas emissions. The greatest advantage is achieved in dual fuel burners where the combustion of both the main fuel and reserve fuel can be adjusted optimally.

### Versatile system

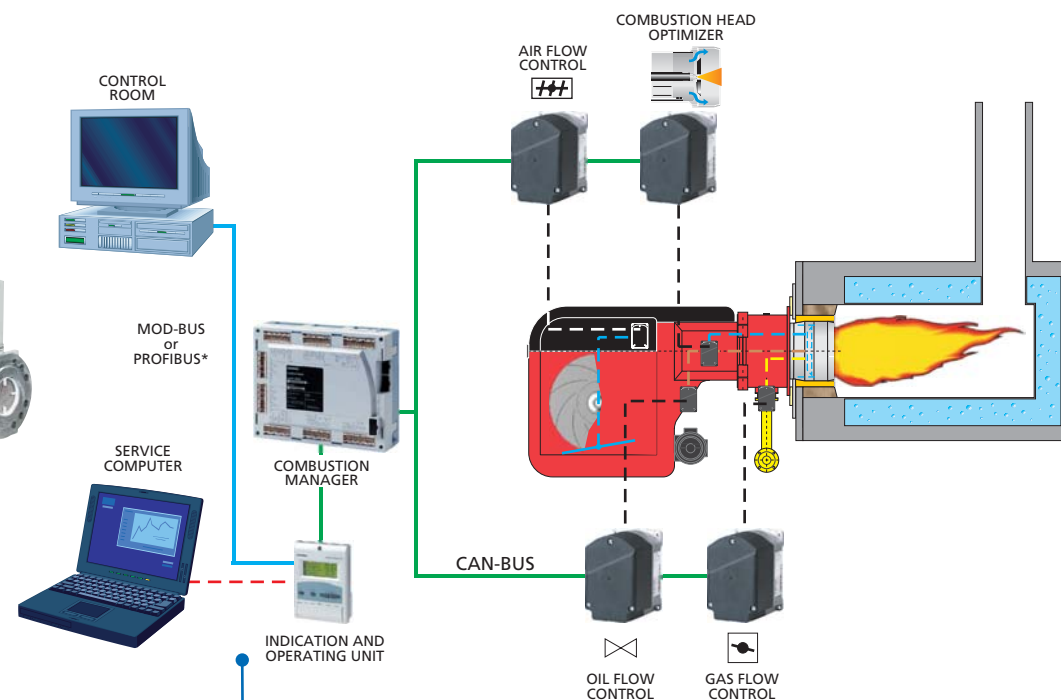
The Oilon WiseDrive operating panel can be connected to external systems via ModBus or ProfiBus DP bus. With the help of bus communication burner status information can be read, such as e.g. servomotor positions. Also remote starting and stopping as well as fuel selection can be performed via the bus. E.g. a GSM modem can be connected into the system through which the main user can e.g. assist in commissioning.

### Security

The WiseDrive security functions are ensured with a doubled processor and internal buses. In addition, the equipment has continuous self-testing for security functions. The system is suitable for continuous use when equipped with the self-monitoring flame detector.



### Oilon WD100 Electronic fuel/air ratio control system



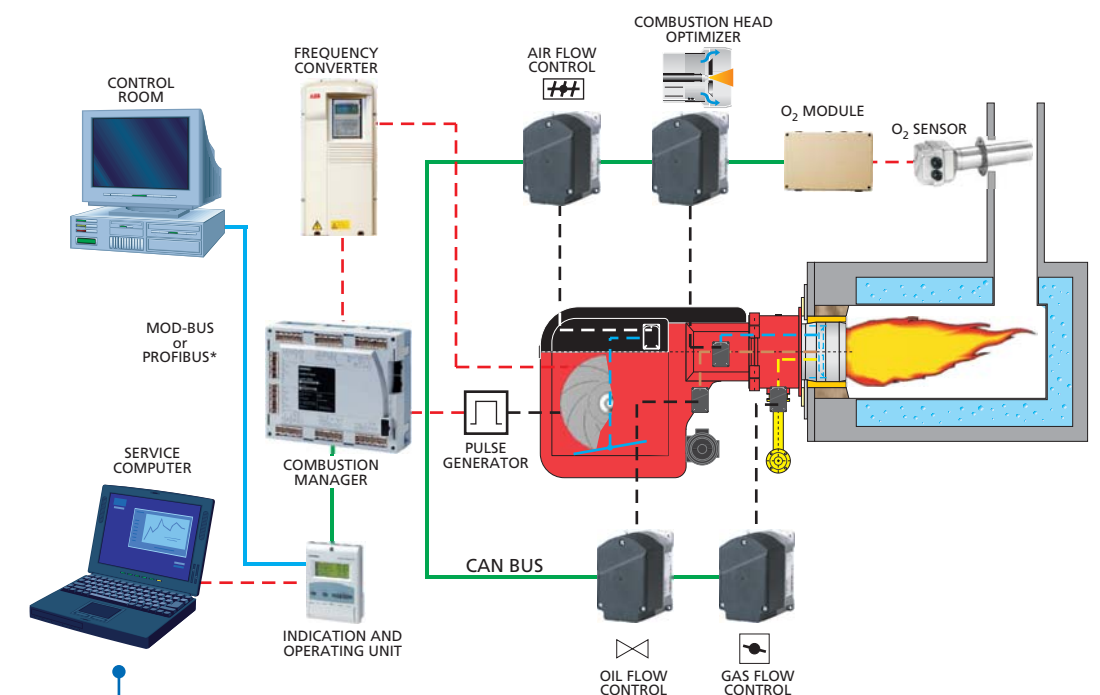
#### Central functions in the WiseDrive system

- burner control and security functions
- electronic fuel/air ratio control
- gas valve leakage tester
- boiler cold-start protection
- boiler temperature limitation
- reading the fuel flow meter
- communication with external systems
- PID adjuster for capacity control (pressure/temperature)
- O<sub>2</sub> control (equipped with O<sub>2</sub> module)
- fan motor frequency converter control
- temperature measurement of combustion air and flue gases
- calculating the combustion efficiency.

#### Oilon WD100 delivery includes

- Control unit
- Operating panel
- Servomotor(s) for oil regulator/gas butterfly valve
- Servomotor for air dampers
- Servomotor for combustion head regulation
- CAN Bus cable between the control unit and servomotors (10 m)
- CAN Bus cable between the control unit and operating panel (3.5 m)
- Portable computer with a remote control software (option)
- Cable between the computer and operating panel (option)
- Bus cable between the control centre and operating panel (option)
- \*Profibus bus transformer (option)
- ModBus RS-232/RS-485 transformer (option)

### Oilon WD200 Electronic fuel/air ratio control system with O<sub>2</sub> control and variable speed drive (VSD)



#### Oilon WD200 delivery includes

- Control unit
- Operating panel
- Servomotor(s) for oil regulator/gas butterfly valve
- Servomotor for air dampers
- Servomotor for combustion head regulation
- Fuel consumption reading
- CAN Bus cable between the control unit, servomotors and O<sub>2</sub> module (30 m)
- CAN Bus cable between the control unit and operating panel (3.5 m)
- Frequency converter and rotation speed sensor (option)
- O<sub>2</sub> module
- O<sub>2</sub> sensor
- Temperature sensor for measuring flue gas temperature (option)
- Temperature sensor for measuring combustion air temperature (option)
- Portable computer with software (option)
- Cable between the computer and operating panel (option)
- Bus cable between the control centre and operating panel (option)
- \*Profibus bus transformer (option)
- ModBus RS-232/RS-485 transformer (option)