

ENGINEERING  
TOMORROW



Brochure | Boiler control

# Enhance safety and reduce maintenance cost by keeping your steam and heat applications under control with Danfoss

10

Types of products.  
Our total solution  
for your application.  
Reduces your number  
of suppliers.

# Reliable and fail-safe controls for industrial heating

*Operating a plant efficiently requires that control and operating equipment is kept in optimum running condition at all times. This is why Danfoss has been a preferred supplier of reliable quality control for more than 75 years – and we keep setting new standards.*

Danfoss delivers comprehensive solutions for demanding applications. Our dedicated teams understand the challenges our customers face and work hard at providing top-of-the-line components and systems that will efficiently meet them. We know that any breakdown or deviation can alter quality, reduce efficiency and, at worst, result in un-safe operations or damaged equipment. Consequently, we offer nothing but the absolute best to ensure smooth performances at your end:

- In-depth know-how
- Outstanding service
- Robust design
- Uncompromising reliability
- Long-term stability
- Environmental consciousness

## **Application areas**

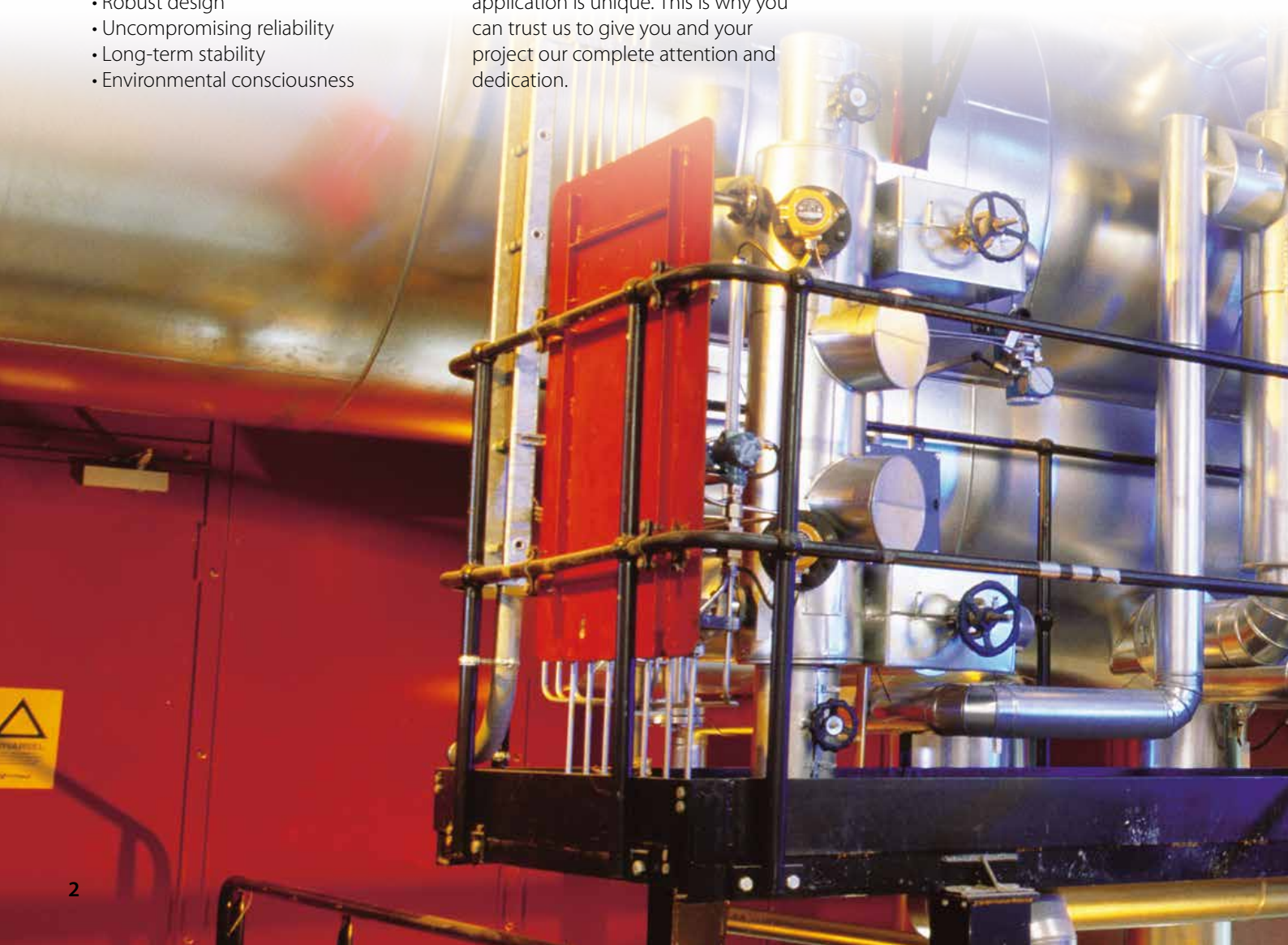
Danfoss provides world-class control solutions for a variety of application areas:

- Boilers
- District heating
- Boiler room equipment
- Biomass boilers
- Autoclaves and sterilizers

Regardless of your area of interest and what-ever your requirement is we will help you find a professional monitoring and control solution to match it. In our world, every customer and every application is unique. This is why you can trust us to give you and your project our complete attention and dedication.

## **Reliable products**

At Danfoss we understand that replacing components and parts is both expensive and disruptive. Consequently, our robust, fail-safe products have been specifically designed to provide a longer service life than standard controls, saving you both time and money. Our production procedures are certified according to ISO/TS 16949.



# Quality you can rely on

## District heating substations

District heating substations require automatic surveillance of water pressure and temperature to ensure a reliable supply of uninterrupted district heating. Danfoss' pressure transmitters, temperature sensors, controls and solenoid valves ensure reliable operations at all times.

## Biomass boilers

In biomass boilers it is paramount to take extra safety precautions to prevent the risk of backburning and overheating. Danfoss' self-acting thermostatically operated valves open for flow at increasing sensor temperatures, making them ideal for sprinkler-supply safety systems.

## Boiler room equipment

In boiler rooms, accurate monitoring of steam/hot water installations, heat exchangers and water treatment equipment for feed water is vital. Insensitive to pressure peaks, Danfoss pressure transmitters and controls offer reliable surveillance and accurately controls air, steam, water and oil.

### PRESSURE SWITCHES

*Read more on page 6*



### TEMPERATURE SWITCHES

*Read more on page 6*



### PRESSURE AND TEMPERATURE SENSORS

*Read more on page 7*



### SOLENOID VALVES

*Read more on page 7*



# Setting new standards for boiler control



**In industrial and district heating boiler systems, 100% reliable operation is a must to ensure a steady supply of hot water or steam – as well as a safe work environment. And Danfoss offers everything you need to do just that.**

Danfoss' wide range of products for boiler control include:

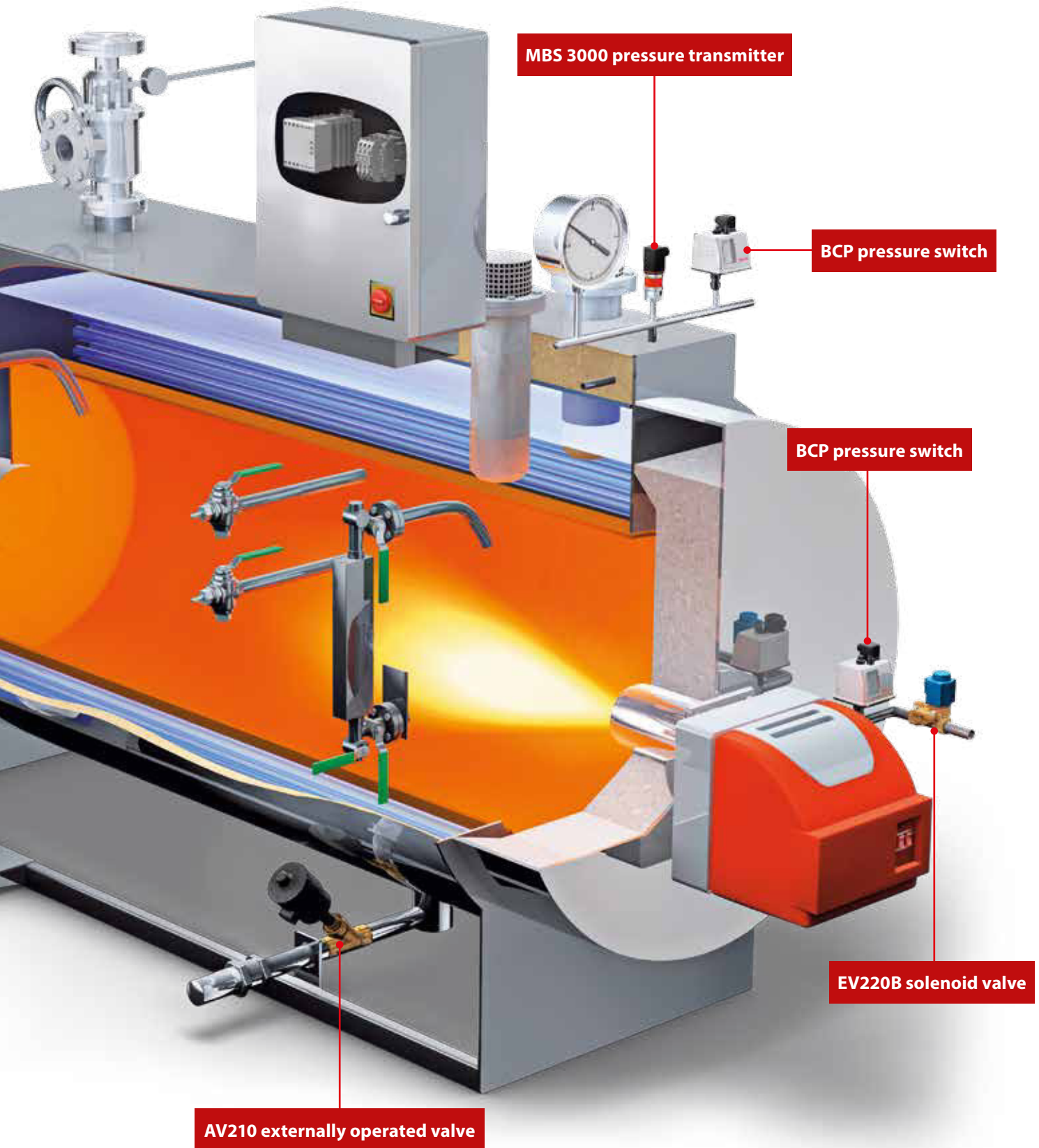
- Safety approved pressure controls, providing accurate operation and reliable alarm and safety functions for steam and high-pressure hot water boilers and burners.
- Pressure transmitters that are insensitive to pressure peaks and offer highly accurate boiler pressure monitoring and control.
- Thermostats for precise control of the temperature on water and thermal oil boilers.
- Temperature sensors for accurate and reliable monitoring of water temperature.
- Solenoid valves for reliable flow control of water, air, oil and steam.
- Externally operated valves, insensitive to dirt and ideal for draining or for optimizing boiler blow down rates to reduce the concentration of solids.



**MBT temperature sensor**



**EV220B solenoid valve**



# Pressure switches



## BCP pressure switches

- Setting range from 0.03 – 40 bar
- SPDT contact system
- Electrical rating  
AC-1: 6A, 250V, AC-15: 1A, 250V,  
DC 13: 10W, 250V
- DIN plug
- Contact material in both silver and gold (gold plated silver)
- Adjustable differential setting
- Enclosure IP65
- TÜV approval
- BCP pressure switch series



## KP pressure switches

- Setting range from 0.4 – 20 bar
- SPDT contact system
- Electrical rating AC-3 16/6 A, 400 V,  
AC-15 10/4, 400 V
- Screw terminals
- Contact material in silver
- Adjustable differential setting
- Enclosure IP30, IP44
- UL and FM approval
- KP pressure switch series



## RT differential pressure switches

- Setting range from 0 – 11 bar
- SPDT contact system
- Electrical rating AC-3 4A, 400 V,  
AC-15 3 A, 400 V
- Screw terminals
- Contact material in both silver and gold
- Fixed differential setting
- Enclosure IP66
- Marine approval
- RT differential pressure switch series

# Temperature switches



## KP temperature switches

- Setting range from 0 – 150 °C
- SPDT contact system
- Electrical rating AC-3 16/6A, 400 V,  
AC-15 10/4 A, 400 V
- Screw terminals
- Contact material in both silver and gold
- Adjustable differential setting
- Enclosure IP30, IP44
- Marine and UL approval
- KP temperature switch series



## RT temperature switches

- Setting range from -60 – 300 °C
- SPDT contact system
- Electrical rating AC-3 4 A, 400 V,  
AC-15 3 A, 400 V
- Screw terminals
- Contact material in both silver and gold
- Adjustable differential setting
- Enclosure IP66
- Marine approval
- RT temperature switch series

# Pressure and Temperature sensors



## Heavy-duty temperature sensors

- Temperature range 50 – 200 °C
- Pt 100 or Pt 1000 sensing element
- Interchangeable measuring insert
- Gold plated contacts
- Optional: Built-in transmitter
- Output signals 4 – 20 mA
- A wide selection of process and electrical connections
- MBT 325X series



## Temperature sensors with integrated transmitter

- Temperature range -50 – 200 °C
- Pt 1000 sensing element
- Fixed measuring insert
- Gold plated contacts
- Output signals 4 – 20 mA or ratiometric
- A wide selection of process and electrical connections
- MBT 3560 series



## Pressure transmitters

- From 0 – 1 bar to 0 – 600 bar
- 4 – 20mA, Absolute voltage
- Version with pulse snubber available
- Media temperature up to 125 °C
- Wetted parts made of stainless steel
- Wide range of electrical and pressure connections
- Excellent over pressure ability
- MBS 3000 series

# Fluid Controls



## Servo-operated solenoid valves

- Flow range 0.5 – 160 m<sup>3</sup>/h
- Differential pressure 0 – 16bar
- Media temperature from -30 – 140 °C (0 – 185 °C for steam versions)
- Ambient temperature: Up to 80 °C
- Coil enclosure: Up to IP67
- Water hammer damped
- EV220B, EV225B (for steam) and EV250B valve series



## Externally-operated valves

- Flow range: 0 – 234 m<sup>3</sup>/h
- Differential pressure: 0 – 16 bar
- Medium temperature: -30 – 180 °C
- Ambient temperature: -30 – 60 °C
- Thread connection: G 3/8 – G 2 in (NC and NO)
- Orifice size: DN 15 – 50 mm
- AV210 valve series



## Thermostatically operated valves

- Differential pressure 0 – 10 bar
- Media temperature -25 – 130 °C
- Thread connection G 3/8 – G 1
- Self-acting – no power needed
- AVTA valve series



Here **today**. Here **tomorrow**.

Danfoss is a leading global player in the development and production of mechanical and electronic products and controls.

Since 1933, our extensive know-how has made modern life easier, and we continue to break new ground in our core business areas.

We produce more than 250,000 items at 70 factories in 25 countries – every day. Impressive as these figures are, we are most proud of the way our dedicated employees apply the high-quality components in customer solutions, adding value to the end product. Building strong partnerships is of great importance to us, because it is purely by understanding our customers' needs that we can meet the expectations of tomorrow.

This is also true in Industrial Automation, a Danfoss entity dedicated to focusing on the industrial world of today.

Through us, you gain access to the entire Danfoss pool of technologies, with special emphasis on sensors and controls.

We offer safer, more reliable and more efficient solutions in a close cooperation based on firm values.

## **Danfoss A/S, Industrial Automation**

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