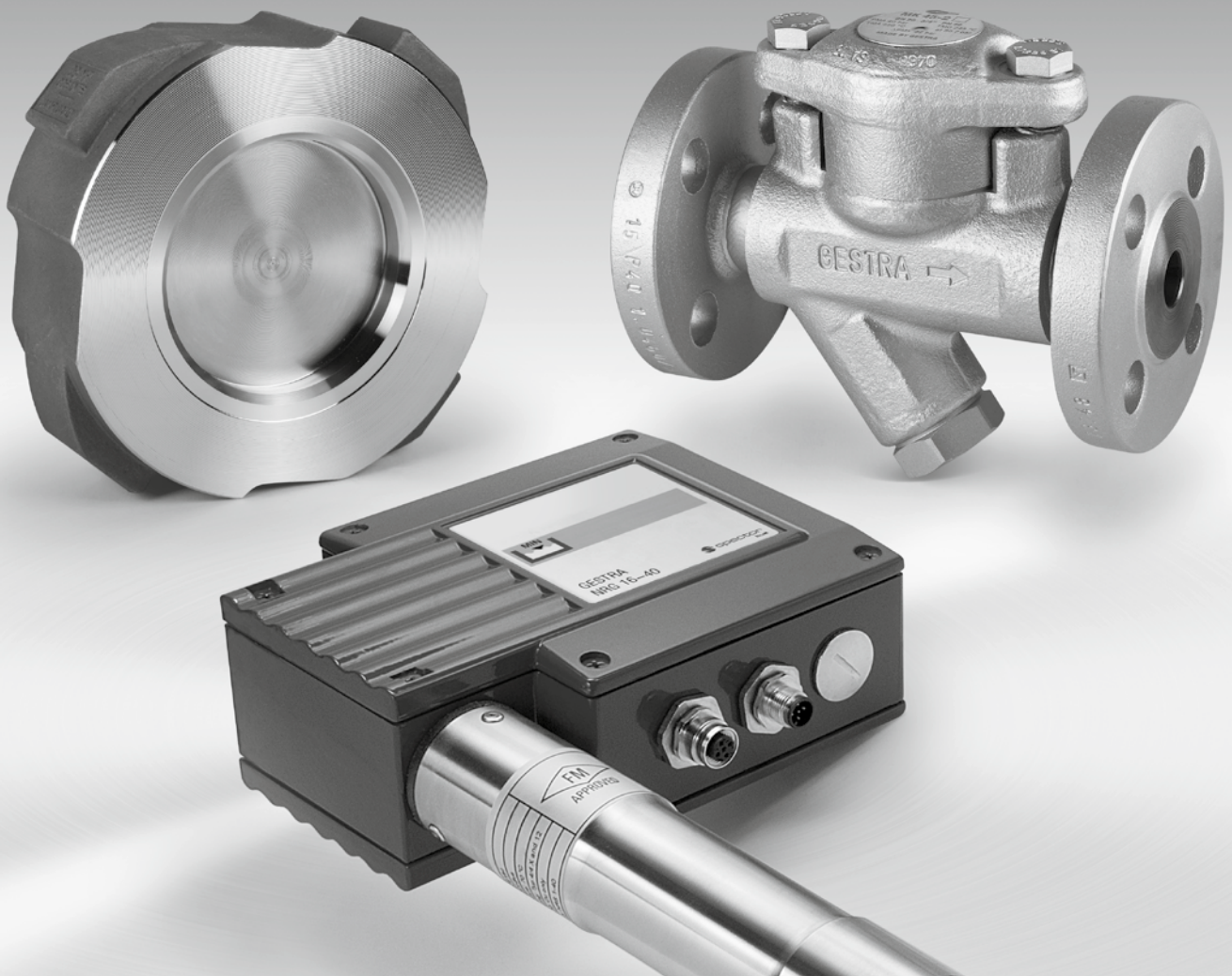




# PRODUCT OVERVIEW

The optimum components for every application



## Steam Traps

### BK Range

Steam traps with bimetallic regulator up to PN 630/Class 2500. BK steam traps are suited to the toughest operating conditions. The bimetallic regulator makes this steam trap particularly resistant to waterhammer and frost.



**BK 45**  
In applications up to PN 40/Class 300. For air-venting.

### MK Range

Steam traps with membrane regulator up to PN 40/Class 300. The GESTRA thermostatic capsule exhibits very high control precision in discharging the condensate. This range is suitable for both small and large condensate flowrates.



**MK 45-2**  
For large condensate flowrates, up to 32 bar. For air-venting.

### UNA Range

Steam traps with ball float up to PN 160/Class 900. Especially suitable for condensate discharge without banking-up, for extreme and sudden fluctuations of pressure and condensate flowrate.



**UNA 1 (left) and UNA 4**  
Adaptable for horizontal or vertical installation.

### UNA 25 PK/PS Range

Pump steam trap / condensate lifter PN 40. Pumping effected by means of motive steam of up to 6 or 13 bar for condensate discharge without banking-up, suitable for all operating conditions, low pressure and vacuum applications.



**UNA 25 PK**  
Automatic activation of motive steam.

### Trap Monitoring

The Vaposcope VK makes the flow processes in pipelines visible by sight-glass. For monitoring the heat exchange surfaces and condensate piping. The Vaposcope can be used in horizontal or vertical pipework without any modification.



Typ VK

## Non-Return-Valves

### Type SBO

Gravity circulation checks are used to prevent gravity circulation in heating and hot-water installations. Depending on the type, they are fitted by union nut to the circulation pump or with a threaded connection at the pump outlet. The SBO types are available from DN 3/4 to DN 1 1/4.

SBO 21



### Type RK 41

Made of special brass (DN 15–100) or grey cast iron (DN 125–200) and with metal-to-metal seating, the non-return valve RK 41 is suitable for liquids, gases and vapours, and for use in heating installations. Soft seats available, PN 6–16, DN 15–200, short overall length to DIN EN 558-1, series 49.

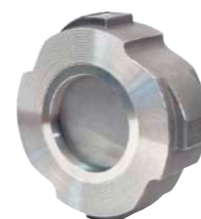
RK 41



### Type RK 86

This non-return valve distinguishes itself for standard applications in piping systems as well as for use with corrosive media and low temperatures. Soft seats available, PN 40/Class 300, DN 15–200, short overall length to DIN EN 558-1, series 49.

RK 86



### Type CB

The swing check valve CB 26 is a cost-efficient unit for applications involving liquids, gases and vapours. This range can be supplied in extremely short overall lengths for DN 50–300 and PN 40.

CB 26



### Type BB

The dual-plate check valves BB, DN 50–1000, short overall length to DIN EN 558-1, series 16, are characterized by low pressure losses and high reliability. Also suitable for gaseous media. Special versions are available with plate dampers and various linings.

BB



## Continuous and Intermittent Blowdown Valves

### Type MPA

For automatic, program-controlled intermittent blowdown of steam boilers and waste-heat boilers. Especially suited for boilers operating without constant supervision (TRD 604). DN 20–50, PN 40–250.

MPA 46



### Type BAE

Continuous blowdown valves with adjustable stage nozzle, sampling valve and electric actuator for automatically controlled continuous blowdown. Especially suited for boilers operating without continuous supervision (TRD 604). DN 15–40, PN 40–320.

BAE 46



## Cooling Water Control Valves

### Type CW

Operating without auxiliary energy, the cooling water control valves type CW, PN 16, DN 25–100, are proportional controllers which regulate the cooling water flowrate of the users or plant components individually as a function of the cooling-water return temperature.

CW 44



CW 41



## Temperature/Pressure Control Valves

**Type 5801**  
Directly controlled pressure-reducing valve with large set-point ranges for steam, gases and liquids.



**Type Clorius**  
Self-acting temperature control valves of the type Clorius operate as normal- and reverse-acting valves with external feeler. Suitable for applications with steam, gas and liquids.



## Control Valves

For the automatic control of the level, temperature, pressure and flow of liquids in heat engineering and process-control technology. DN 15–100, PN 16/40. With pneumatic or electric actuators.



## Spare Part Kits

By using genuine GESTRA spare parts, you can be sure that your equipment will continue to function perfectly, that no problems will occur during installation and that the right materials have been selected with regard to the required pressure and temperature stability. Naturally, the GESTRA warranty also applies to the spare parts to the full extent and all statutory provisions are met.

## Background: Energy Recovery

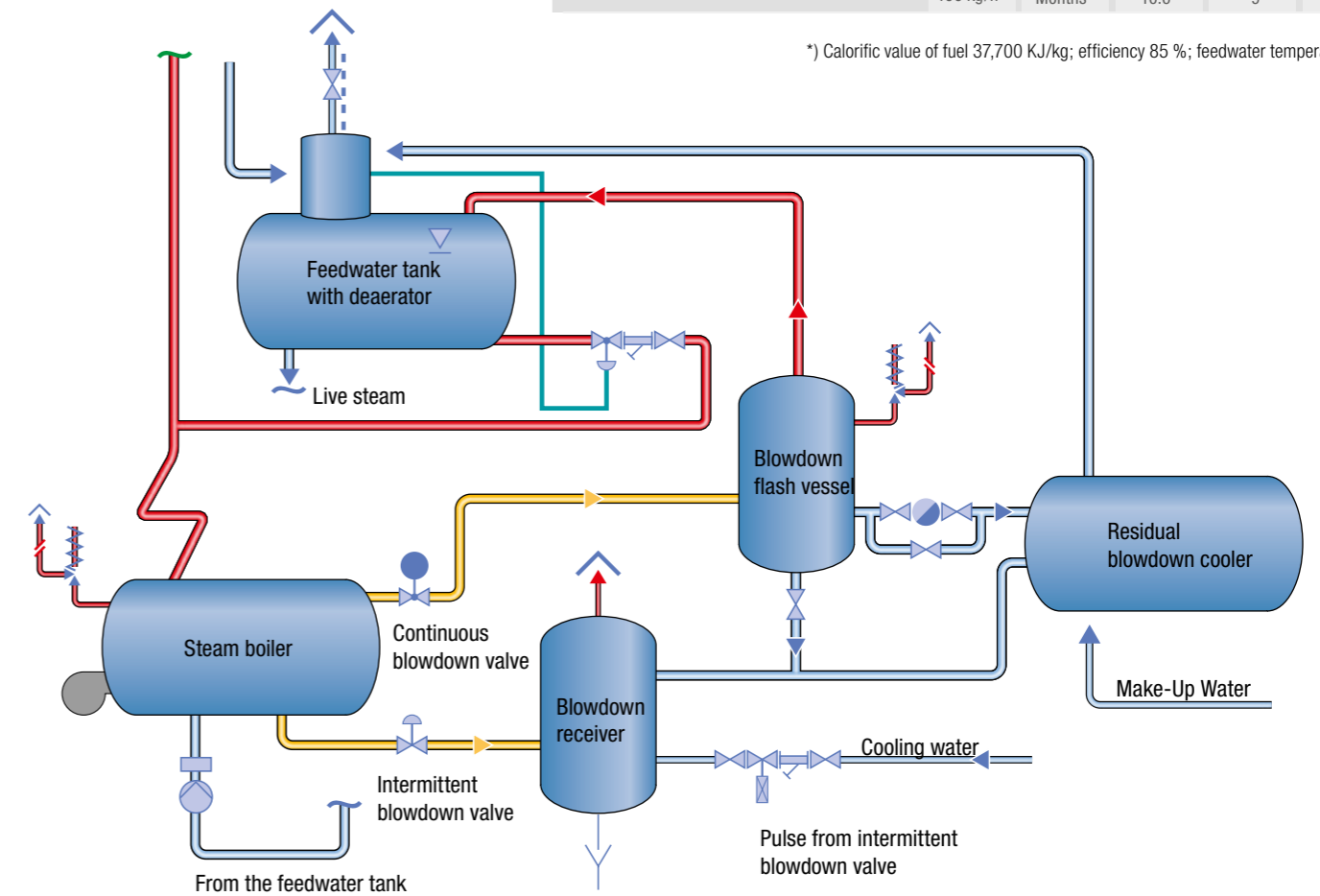
### Energy Recovery after Continuous Blowdown

After continuous blowdown, irrespective of whether automatically controlled or manually set, it is easily possible to utilize the dissipated heat. For example, in a GESTRA blowdown flash vessel, the energy generated by the continuous blowdown in the boiler blowdown is recuperated to a large degree by flashing. In a residual blowdown cooler located downstream, the heat remaining in the flash vessel can also be used to preheat the feedwater. Our experienced specialists in industrial systems engineering are available to you for individual advice.

In Germany, the heat recovery plants made by GESTRA are eligible for an investment subsidy; according to the Income Tax Law and the Investment Subsidy Law, the grant amounts to 7.5 %.

Boiler pressure		bar	8	16	32
Hourly heat savings when the continuous blowdown flowrate is reduced by 20, 50 and 100 kg/h	20 kg/h	W	4,126	4,844	5,231
		kJ/h	14,852.8	17,436.8	18,832
	50 kg/h	W	10,314	12,109	13,078
		kJ/h	37,132	43,592	47,080
100 kg/h	W	20,629	24,218	26,156	
	kJ/h	74,264	87,184	94,160	
Annual savings of heating oil or energy costs when the continuous blowdown flowrate is reduced by 20, 50 and 100 kg/h (taking 250 days with 24 hours = 6,000 hours) *)	20 kg/h	kg	2,624.6	3,108.5	3,369.7
		€	787.40	932.50	1,010.90
	50 kg/h	kg	6,796.1	8,005.7	8,658.8
	€	2,038.80	2,401.70	2,597.60	
100 kg/h	kg	13,748.6	16,167.7	17,473.9	
	€	4,124.60	4,850.30	5,242.20	
Equipment investment on basis of WÜ100; units with TUV and EU type approval (with Reactomat) not incl. installation		approx. €	3,634	3,634	3,634
Equipment amortization when the top blowdown quantity is reduced by 20, 50 and 100 kg/h	20 kg/h	Months	55	47	43
	50 kg/h	Months	21	18	17
	100 kg/h	Months	10.6	9	8.3

Schematic diagram of a blowdown flash installation with blowdown receiver

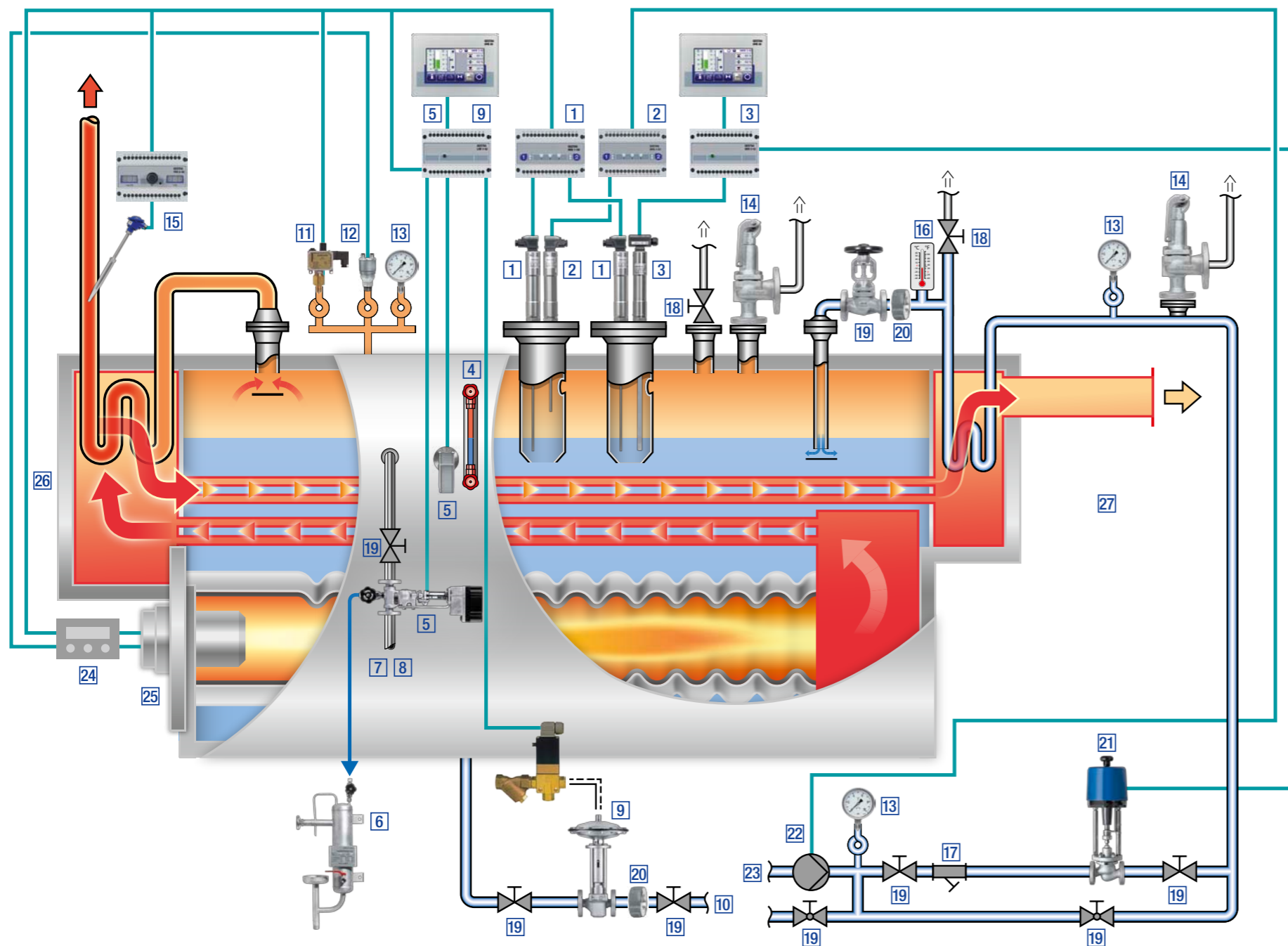


\*) Calorific value of fuel 37,700 KJ/kg; efficiency 85 %; feedwater temperature 10 °C



# GESTRA Steam Boiler Equipment with Bus Technology

For operation e.g. according to TRD 604 (72 h) or EN 12953 (24 h)



Key	Function
1	Low-level limiter of "high-integrity design": level electrode NRG 16-50, level switch NRS 1-50, SIL 3
2	Separate high-level alarm of "high-integrity design": level electrode NRG 16-51, level switch NRS 1-51, SIL 3
3	Level control with high-level alarm and remote water level indicator: level probe NRG 26-21, level controller NRR 2-52, control terminal and display unit URB 50 und control valve V 725
4	Water level gauge
5	Conductivity measurement with indication, limit switch and ontinuous blowdown control: conductivity electrode LRGT 16-2, continuous blowdown controller LRR 1-53, continuous blow down valve BAE, control terminal and display unit URB 50
6	Sample cooler
7	Blowdown flash vessel
8	Residual blowdown cooler
9	Automatic intermittent blowdown: intermittent blowdown valve MPA, pilot valve
10	Blowdown receiver
11	Pressure limiter DSF
12	Pressure transmitter DRT
13	Pressure gauge
14	Safety valve GSV
15	Safety temperature monitor/limiter: resistance thermometer TRG, temperature switch TRS 5-50, SIL 3
16	Thermometer
17	Strainer
18	Vent valve
19	Stop valve (also in bypass)
20	Non-return valve
21	Electrical or pneumatic control valve V 725
22	Feedwater pump
23	Monitoring of the feedwater/condensate
24	Burner control unit
25	Burner
26	Superheater
27	Economizer

## The benefits in detail

- 1. No risk of overheating:**
    - Patented thermal barrier in cylindrical body above electrode flange
    - Electronic temperature protection in the terminal box
    - Minimization of thermal effects
  - 2. Easy intallation and mainte:**
    - Freely accessible connecting terminals at the control units
    - Large terminal box for easy installation
  - 3. Reduced cost:**
    - Minimezed inventory and spares levels
    - Only a single cable needed between boiler and control cabinet
    - Only one cable in the control cabinet for all sensing units
    - Optimum system integration without additional cable installations
  - 4. Increased safety:**
    - Active cable monitoring
    - Easy integration into visual display and automation systems
- Get a technical lead with the first and only control package for energy supply centres using an open CAN-bus system. Only GESTRA permits easy interfacing to other open bus systems.**



With Energy into the Future

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