

Flame sensor with fibre optic system

Systems for flame monitoring:

- D-LE 701 flame sensor with
 - flexible fibre optic system D-LL 701
 - rigid fibre optic system D-LL 702

- D-LE 703 flame sensor with
 - flexible fibre optic system D-LL 703
 - rigid fibre optic system D-LL 704.

Features of the flame sensor

- Self-monitoring and fail-safe flame sensor with a fibre-optic connection in conjunction with a control unit/burner control
- Monitoring of gas, oil and coal flames
- Connection to the D-UG 120, D-UG 660 control unit and the D-GF 150 burner control
- Spectral range from UV to IR
- Uniform output signal thus mutually interchangeable
- Adjustable to different combustion technologies such as exhaust gas recirculation.

Applications

- Burners with difficult installation conditions for conventional flame sensors or on those whose environmental temperature near the sighting tube is too high
- Power stations
- Chemical industry
- Refineries
- Cement plants
- Waste incinerators
- Steam generators
- Heating plants.

Certifications

- DVGW
- GOST-R.



Functional description

The fibre optic system may be integrated directly into the hot area of the burner. It transfers the radiation from the flame over a fibre optic bundle to the flame sensor installed outside the burner. It is available in different lengths.

The photo element in the flame sensor generates a signal which is proportional to the flame radiation intensity. The output signal of the flame sensor is used as an input signal to a control unit or a burner control.

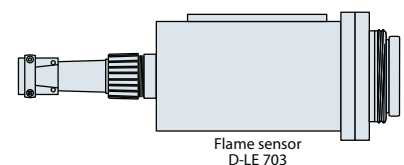
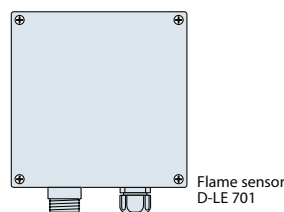
Accessories

- **Digital display** for measuring the pulse rate and its extreme values (D-ZS 087-20)
- **UV-A, UV-B and IR test light source** 230 V/50 Hz (D-ZS 093)
- **Terminal box** for connecting flame sensor (D-ZS 140)
- **Installation flange** for D-LL 702 for fibre optic system (D-ZS 702)
- **Welding flange** for D-LL 702 for fibre optic system (D-ZS 704).

Flame sensor selection

Flame sensor	Suitable for fuels				Features
	Gas	Oil	Coal	Wood	
D-LE 701 / 703 UAF	○	++			with intensive ambient light (neighbouring burners), gain switchover
D-LE 701 / 703 UA	+	++	+		with low NO _x component, gain switchover
D-LE 701 / 703 IS	!	+	++	+	selective single burner monitoring (coal, oil)
D-LE 701 IGA / 703 IG	○	+	++	++	selective single burner monitoring (coal, oil, wood)

++ ideally suited + well suited ○ conditionally suited ! not permitted (from experience)



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DURAG GROUP smart solutions for combustion and environment

D-LE 701 flame sensor		D-LE 703 flame sensor	
Operation mode	Intermittent operation, continuous operation and 72-hour operation without permanent supervision	Operation mode	Intermittent operation, continuous operation and 72-hour operation without permanent supervision
Safety	Self-monitoring and fail-safe in conjunction with a control unit/burner control	Safety	Self-monitoring and fail-safe
Protection	with cable gland (D-LE 701...-CG) IP65, with axial plug (D-LE 701...-P) IP67	Protection	with cable gland (D-LE 603...-CG) IP65, with axial plug (D-LE 603...-P) IP67
Gain	four settings	Gain	four settings
High-pass filter	three settings	High-pass filter	three settings
Spectral ranges	UV, VIS, IR	Spectral ranges	UV, VIS, IR
Perm. ambient temperature	-20...+60°C	Perm. ambient temperature	-20...+60°C
Dimensions	160x185x100 mm (WxHxD)	Dimensions	90x92 mm, length approx. 270 mm
Weight	approx. 1.2 kg	Weight	approx 1.2 kg

