

D-LX 110
Compact flame monitor
Easy, versatile and flexible



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Optical flame monitoring

For industrial combustion plants with complex process sequences or several fuels the method of optical flame monitoring often is the most adequate one. It offers a way of monitoring that on one hand is burner selective as well as fuel selective, on the other hand can be adapted well to very variable combustion conditions.

To monitor the flame the device evaluates electromagnetic radiation in the ultraviolet, visible or infrared region of the spectrum for its flame specific portions and analyses these in more detail. For this the D-LX 110 investigates the intensity of the flame flickering or of the radiation in the short wavelength range in order to distinguish the signal from the background radiation of the hot fixtures within the chamber.

As a safety device the D-LX 110 is built fail safe and self-monitoring. Through its design as a compact flame monitor it possesses two direct relay outputs for the flame signal. As a modern flame monitor it allows for flexible adjustment to the local combustion conditions.

Housing variants



Upper images:
Examples of the housing variants used for the product family (from the top):
– Housing M5 (shown with plug connector)
– Housing M4 (version for Ex zone 1/21)

Images below:
Each housing variant allows to check the status of flame and device at a single glance.

Certifications (according to variant)

DURAG

CE



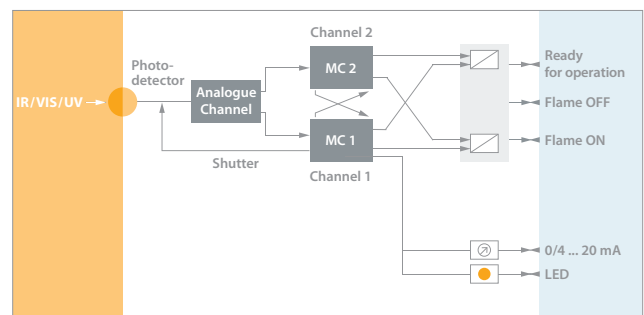
UL US



Facts + Specifications

Spectral sensitivity	UL: 185 ... 260 nm UAF: 280 ... 410 nm UA: 190 ... 520 nm IS: 300 ... 1100 nm IG: 780 ... 1800 nm
Electrical connection	24 V $\overline{=}$, 7 W, PELV
Ambient temperature	-40 °C ... +75 °C; Version UL: -40 °C ... +70 °C
FFDT (safety time)	0.5 ... 5 s (in steps of 0.5 s)
Flame contacts	Normally open contact: active when flame ON Normally closed contact: active when flame OFF
Ready for operation contact	Normally open contact: active when no fault
Switching capacity relay contacts	Max. 24 V $\overline{=}$, 0.5 A Max. 250 V \sim , 2.0 A at 250 V/cos φ = 1.0
Analogue output (selectable)	0/4 ... 20 mA, Load max. 750 Ohm
Protection type	IP66/IP68 IP65 (/MP7) IP66 (Ex variants)
Process connection	G1¼" or NPT1¼", F
Purge air connection	G½" or NPT ½", F
Viewing angle	6° 6° hor., 12° vert. (D-LX 110 UL)
Dimensions	Hsg. M5 100 x 100 x 260 mm Hsg. M4 Ø120 mm Length approx. 310 mm
Weight (w/o cable)	Housing M5 approx. 1.3 kg Housing M4 approx. 3.0 kg

- ▶ Applicable from -40°C up to +75/70 °C, certified and without need for accessories to isolate, heat or cool
- ▶ Two channel control unit module for highest safety coexisting with highest availability
- ▶ Ideal support for Functional Safety within safety chains up to SIL3
- ▶ Different variants certified for diverse systems of standards for many parts of the world and many fields of application
- ▶ Two contacts for the flame signal (NO and NC)
- ▶ All variants also available for use with fibre optic systems (designation D-LX 710), also the Ex versions
- ▶ Easy exchange of consumable parts
- ▶ Low maintenance requirements
- ▶ Local display of settings and operational status for the whole ambient temperature range, visible for all versions at a single glance



Functional diagram of D-LX 110/710.

The two channel design characteristic for DURAG flame monitors is visible.

Features + benefits

- ▶ **Easy adjustment**
The easy access to the available adjustments shortens time needed for commissioning
- ▶ **Versatile detection**
The choice of available detectors allows for the monitoring of flames of all fuels within the same device family
- ▶ **Versatile for the most variable application conditions**
The same device technology can be used without change for the most different geographical regions and based on varying systems of standards
- ▶ **Flexible for changed requirements**
If the requirements of the plant change (Ex zones, need for fibre optic systems) it usually is possible to adapt via a replacement within the same device family
- ▶ **Flexible operation support**
The possibility to adapt device settings also outside the factory enables fast local replacements with smaller stocks of replacement devices

Applications

- ▶ Simple combustion plants with single burners or optically separated burners
- ▶ Combustion processes with continuous operation
- ▶ Thermal processing plants
- ▶ Chemical plants
- ▶ Refineries
- ▶ Waste incineration plants
- ▶ Petrochemical plants
- ▶ Steel industry





Optical access for M5 housing, direct view (left) and for combination with fibre optic systems



M5 housing with purge air flange and plug connector

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