

Control Unit BROCHURE

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Control unit

Self-monitoring and fail-safe control unit for the monitoring of gas, oil and coal flames with DURAG UV, UV+IR or IR flame sensors, primarily in single burner furnaces.

Features

- suitable for intermittent operation, continuous operation and 72-hour operation according to TRD 604
- LED display
- Installation on DIN-rail.

Applications

- Power stations
- Chemical industry
- Refineries
- Cement plants
- Waste incinerators
- Steam generators
- Heating plants.

Certifications

- DVGW
- APAVE
- UL 372
- FM Class 7610
- GOST-R.



Functional description

The D-UG 120 control unit analyses the flame radiation via the signal of the flame sensor connected.

The easy-to-read LED display shows the operational status of the flame monitor.

The flame intensity is present as a current at an output 0/4...20 mA for further analysis.

Flame sensors

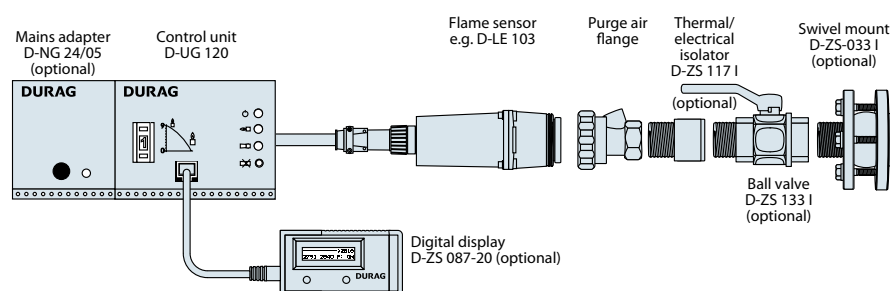
- D-LE 103 for standard applications
- D-LE 603 for selective flame monitoring
- D-LE 701/703 for special applications (fibre optics)
- D-GT 800 for particularly harsh environments
- sensors for Ex-applications are also available

Design

- Enclosure for DIN-rail mounting.

Accessories

- **Power supply unit** for connecting the D-UG 120 to 230VAC (D-NG 24/05)
- **Digital display** for optimal adjustment of the flame sensors by measuring the pulse rate and its extreme values (D-ZS 087 - 20)
- **Optical adjustment aid** for the alignment of the Swivel mount on the sighting tube (D-ZS 118)
- **UV-C test light source** 230 V / 50 Hz (D-ZS 077-10)
- **UV-A, UV-B and IR test light source** 230 V/50 Hz (D-ZS 093)
- **Swivel mount** for alignment of flame monitor to the flame to be monitored (D-ZS 033 - I)
- **Thermal isolator** with electrical insulation (D-ZS 117 - I)
- **Ball valve** for closing sighting tube (D-ZS 133 - I)
- **Terminal box** for connecting flame monitor (D-ZS 140 / 141).



Operation mode	Intermittent operation, continuous operation, 72-hour operation without permanent supervision	Configurable switching thresholds	1
Safety	Self-monitoring and fail-safe	Threshold setting	0...9
Power supply	24 VDC	Flame sensor	1
Protection	IP20	Display	LED
Flame relay	1x NO contact, 230 VAC, 2 A	Flame intensity	0/4...20 mA
Status relay	1x NO contact, 230 VAC, 2 A	Perm. ambient temperature	-20...+60°C
Installation	TS 35 DIN-rail	Dimensions	100 x 75 x 118 mm (WxHxD)
Safety time	1 s	Weight	approx. 0.45 kg

Control unit

Self-monitoring and fail-safe control unit for the monitoring of gas, oil and coal flames with DURAG UV, UV+IR or IR- flame sensors, primarily in multiple-burner furnaces.

Features

- Suitable for intermittent operation, continuous operation and 72-hour operation as per TRD 604
- Optional parallel operation of two flame sensors in any combination: UV/UV, UV/IR or IR/IR
- Three different settings supported for various modes (e.g. dependent on fuel or combustion technology), automatic activation by burner management system
- Plain text display.

Applications

- Power stations
- Chemical industry
- Refineries
- Cement plants
- Waste incinerators
- Steam generators
- Heating plants.

Certifications

- DVGW
- APAVE
- UL 372
- FM Class 7610
- AGA: AG 210
- GOST-R.



D-UG 660

Functional description

The D-UG 660 control unit analyses the flame radiation via the pulse signal of the flame sensor connected.

The easy-to-read LCD display continually shows information on the defined setting and operational status.

The flame intensity and signal are present at two current outputs 0/4...20 mA for further analysis.

Flame sensors

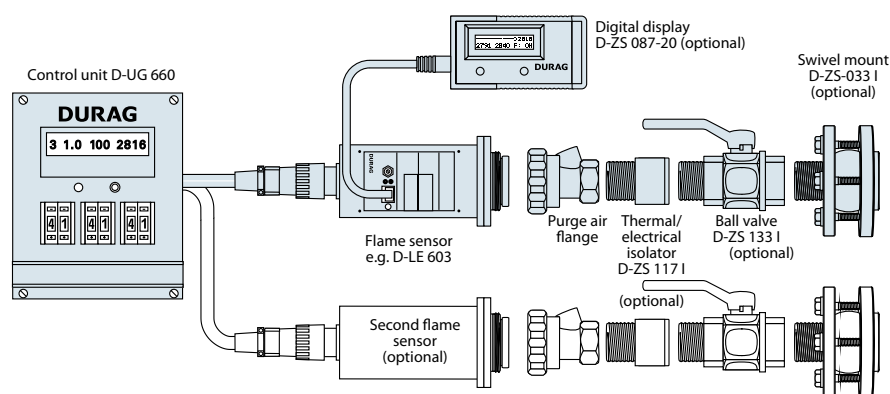
- D-LE 103 for standard applications
- D-LE 603 for selective flame monitoring
- D-LE 701/703 for special applications (fibre optics)
- D-GT 800 for particularly harsh environments
- sensors for Ex-applications are also available.

Design

- Plug-in module (21HP and 3RU) for 19" racks (IP00).

Accessories

- **Digital display** for optimal adjustment of the flame sensors by measuring the pulse rate and its extreme values (D-ZS 087 - 20)
- **Optical adjustment aid** for the alignment of the Swivel mount on the sighting tube (D-ZS 118)
- **UV-C test light source** 230 V / 50 Hz (D-ZS 077-10)
- **UV-A, UV-B and IR test light source** 230 V/50 Hz (D-ZS 093)
- **Swivel mount** for alignment of flame monitor to the flame to be monitored (D-ZS 033 - I)
- **Thermal isolator** with electrical isolation (D-ZS 117 - I)
- **Ball valve** for closing sighting tube (D-ZS 133 - I)
- **Terminal box** for connecting flame monitor (D-ZS 140 / 141)
- Various **enclosures and racks** for 1 to 4 devices.



Operation mode	Intermittent operation, continuous operation, 72-hour operation without continual supervision	Pre-configurable combinations of switching threshold and safety time	3
Safety	Self-monitoring and fail-safe	Flame sensor connection	1 or 2 (parallel)
Power supply	24/48 VDC, 115/230 VAC	Display	alpha-numeric LCD display
Protection	IP00	Flame intensity	0/4...20 mA
Flame relay	1x switch-over contact, 230 VAC, 2 A	Flame signal	0/4...20 mA
Status relay	1x switch-over contact, 230 VAC, 2 A	Perm. ambient temperature	-20...+60°C
Threshold setting	00...99	Dimensions	19" plug-in module, 3 RU, 21 HP
Safety time	1 ... 5.5 s	Weight	approx. 1 kg

Flame monitor

Particularly cost-effective, fail-safe flame monitors for the monitoring of gas and oil burners as well as combined gas/oil burners.

Features

- monitoring of gas and oil burners of any load
- suitable for intermittent operation and continuous operation (only AAL 75 POD)
- simple installation on TS 35 DIN-rail.

Applications

- Chemical industry
- Refineries
- Cement plants
- Waste incinerators
- Steam generators
- Heating plants.

Certifications

- DVGW (not D-IR 55)
- UL 372 (not AAL 75)
- FM Class 7610



AAL 75



D-IR 55



D-UV 55

Functional description

The flame monitor comprises of a control unit and flame sensor.

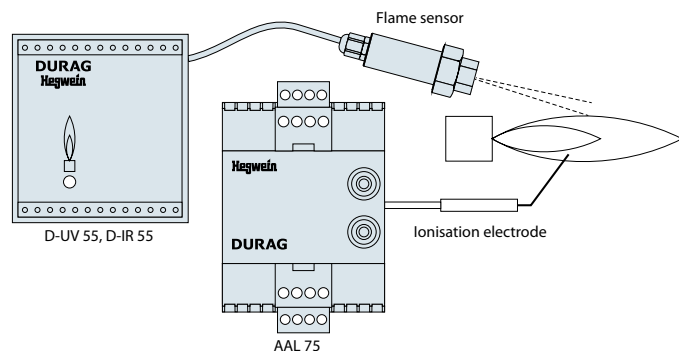
- Optical flame sensors generate a signal from the UV or IR range of the flame radiation
- Flame sensors with an ionisation electrode process a current flowing through the flame

Models

- **AAL 75**
Ionisation flame monitor for intermittent or continuous operation.
Also suitable for single electrode operation in conjunction with DURAG ignition transformers, model D-HG 55.
- **D-IR 55**
Infra-red flame monitor for intermittent operation.
Analyses flame intensity (flickering) in conjunction with the D-LE 55 ISF-CG flame sensor.
- **D-UV 55**
UV flame monitor for intermittent operation.
Analyses the flame intensity in conjunction with the D-LE 55 UL-CG flame sensor.

Accessories

- **Cable** for connecting the ionisation electrode to the ionisation flame monitor (kleZ912F0)
- **Ball valve** for closing the sighting tube (D-ZS 133 III)
- **Swivel mount** for alignment of the flame sensor to the flame to be monitored (D-ZS 033 III)
- **Test light source** for D-UV 55/D-LE 55 for functional test of the flame monitor, battery operated (D-ZS 091).
- **Test light source** for D-IR 55/D-LE 55 ISF-CG for functional test of the flame monitor, voltage supply 115/230 VAC / 42-60Hz (D-ZS 093)
- **Thermal isolator** with electrical insulation for D-LE 55 UL-CG and D-LE 55 ISF-CG flame sensor (D-ZS 117 III).



Flame monitor (control unit)		Flame sensor	
Type	AAL 75	D-IR 55 / D-UV 55	
Operational mode	Intermittent operation	Intermittent operation	
Supply voltage	115 / 230 VAC, 50 / 60 Hz	115 / 230 VAC, 50 / 60 Hz	
Perm. ambient temperature	-20...+60°C	-20...+60°C	
Safety time	1 s	1 s, 3 s or 5 s	
Display	LED	LED	
Protection	IP20	IP20	
Flame relay	2 relay outputs: 250 VAC / 350 mA and 250 VAC / 2 A	1 relay output: 250 VAC / 2 A	
Installation	TS 35 DIN-rail	TS 35 DIN-rail	
Dimensions	68x119x104 mm (WxHxD)	75x118x70 mm (WxHxD)	
Weight	0.55 kg	0.3 kg	
		Spectral sensitivity	D-LE 55 ISF-CG: 790 – 1050 nm D-LE 55 UL-CG: 190 – 270 nm
		Perm. ambient temperature	-20...+60°C
		Mounting	G 1" or G ½"
		Protection	IP67
		Dimensions	Ø27 mm, length 116 mm
		Weight	0.45 kg

Feuerungsautomat Burner Control D-GF 150



Feuerungsautomat Burner Control ASD-75



Steuergerät Control Unit A 240 K 3...



Betrieb	Intermittierender Betrieb, Dauerbetrieb, 72 Stunden Betrieb ohne ständige Beaufsichtigung
Betriebsspannung	220/230 V oder 115 V, 50/60 Hz
Leistung	20 VA
Vorspülzeit, einstellbar	30 s - 20 min.
Programmablauf	LED-Anzeige
Sicherheitszeit	3 s oder 5 s
Abschaltzeit	<1 s
Schutzart	IP 20
Geeignet für	Zünder und Brenner mit Zündtrafo und Ionisations-Flammenwächter (Hegwein)

Operation	intermittent operation, continuous operation, 72-hour operation without permanent supervision
Supply voltage	220/230 V or 115 V, 50/60 Hz
Power rating	20 VA
Adjustable prepurging time	30 s - 20 min.
Programme status	LED status indicator
Safety time	3 s or 5 s
Shut-off time	<1 s
Protection	IP 20
Suitable for	igniters and burners with spark transformer and ionisation flame monitor (Hegwein)

Betriebsart	ASD-75/POI: Intermittierender Betrieb, ASD-75/POD: Dauerbetrieb
Sicherheit	Selbstüberwachend und fehlersicher
Netzspannung	115/230 VAC, 50/60 Hz
Vorlufzeit	0 s, 30 s, 60 s oder 120 s
Erste Sicherheitszeit (Anlauf)	3 s, 5 s, 10 s oder 15 s
Flammenausfallzeit	1 s, 2 s, 3 s oder 5 s
Flammenintensität	0...50 µA
Zul. Umgebungstemperatur	-20...+60°C
Installation	Hutschiene TS 35
Schutzart	IP20
Anzeige	LEDs
Gewicht	ca. 1 kg
Eingänge	externer Flammenwächter, 90-110 VDC Flammensignal
Länge Flammensignalkabel	max. 150 m
Abmessungen	113x103x118 mm (BxHxD)

Operational mode	ASD-75/POI: Intermittent operation, ASD-75/POD: Continuous operation
Safety	Self-monitoring and fail-safe
Power supply	115/230 VAC, 50/60 Hz
Prepurge time	0 s, 30 s, 60 s or 120 s
First safety time (start-up)	3 s, 5 s, 10 s or 15 s
Flame failure response time	1 s, 2 s, 3 s or 5 s
Flame intensity	0...50 µA
Perm. ambient temperature	-20...+60°C
Installation	DIN-rail TS 35
Protection	IP20
Display	LED
Weight	approx. 1 kg
Inputs	external flame monitor, 90-110 VDC flame signal
Length of flame signal cable	max. 150 m
Dimensions	113x103x118 mm (wxhxd)

Betrieb	für intermittierenden Betrieb oder Dauerbetrieb, mit potentialfreiem Schaltteil zur Einbindung in eine übergeordnete Brennersteuerung
Betriebsspannung	24 VDC
Leistung	5 VA
Vorspülzeit	keine
Sicherheitszeit	3 s, 5 s, 8 s
Abschaltzeit	<1 s
Signalkabellänge	max. 150 m
Einbau	in 19"-Rack
Geeignet für	Zünder und Brenner mit Zündtrafo und Ionisations-Flammenwächter (Hegwein)

Operation	for intermittent or continuous operation, with volt-free relay contact for integration into the main burner management system
Supply voltage	24 VDC
Power rating	5 VA
Prepurging time	none
Safety time	3 s, 5 s, 8 s
Shut-off time	<1 s
Signal cable length	max. 150 m
Mounting	in 19"-Rack
Suitable for	igniters and burners with spark transformer and ionisation flame monitor (Hegwein)

Flammenrelais Flame Relay A 285 K 2.3



Betrieb	zur Einbindung in eine übergeordnete Brennersteuerung
Betriebsspannung	90 - 110 VDC
Schutzart	IP 20
Signalkabellänge	max. 150 m
Einbau	in Schaltschrank auf 35 mm Hutprofilschiene nach IEC/EN 60715
Geeignet für	Zünder und Brenner mit Zündtrafo und Ionisations-Flammenwächter (Hegwein)
Kontakte	2 potentialfreie Wechsler, max. 250 VAC, 1 A ohmsche Last

Operation	for integration into the main burner management system
Supply voltage	90 - 110 VDC
Protection	IP 20
Signal cable length	max. 150 m
Mounting	in control cabinet on 35 mm rails according to IEC/EN 60715
Suitable for	igniters and burners with spark transformer and ionisation flame monitor (Hegwein)
Contacts	2 volt-free change-over, max. 250 VAC, 1 A resistive load

Ionisations-Flammenwächter Ionisation Flame Monitor AAL 75



Betrieb	für intermittierenden Betrieb oder Dauerbetrieb, mit 1 potentialfreien Wechsler
Betriebsspannung	115/230 VAC 50/60 Hz
Leistung	10 VA
Schutzart	IP 20
Signalkabellänge	max. 150 m
Gehäuse	Kunststoff
Einbau	in Schaltschrank auf 35 mm Hutprofilschiene nach IEC/EN 60715
Geeignet für	Zünder und Brenner mit Ionisationselektrode
Gehäuse 2-teilig	Kunststoff
Geeignet für	Zünder und Brenner mit Zündtrafo und Ionisations-Flammenwächter (Hegwein)
4-20 mA Ausgang (nur zu Visualisierungszwecken)	optional

Operation	for intermittent or continuous operation, with 1 volt-free relay contact
Supply voltage	115/230 VAC 50/60 Hz
Power rating	10 VA
Protection	IP 20
Signal cable length	max. 150 m
Housing	plastic
Mounting	in control cabinet on 35 mm rails according to IEC/EN 60715
Suitable for	igniters and burners with flame rod
Two-part housing	plastic
Suitable for	igniters and burners with spark transformer and ionisation flame monitor (Hegwein)
4-20 mA output (for visualisation purposes only)	optional extra

Feuerungsautomat Burner Control D-GF 75



Betriebsart	D-GF 75-10: Intermittierender Betrieb, D-GF 75-20: Dauerbetrieb
Sicherheit	Selbstüberwachend und fehlersicher
Netzspannung	115/230 VAC, 50/60 Hz
Vorlufzeit	0 s, 30 s, 60 s oder 120 s
Erste Sicherheitszeit (Anlauf)	3 s, 5 s, 10 s oder 15 s
Flammenausfallzeit	1 s, 2 s, 3 s oder 5 s
Flammenintensität	0...50 µA
Zul. Umgebungstemperatur	-20...+60°C
Installation	Hutschiene TS 35
Schutzart	IP20
Anzeige	LEDs
Gewicht	ca. 1 kg
Flammenfühler	externer Flammenwächter, Ionisationselektrode
Länge der Ionisationsleitung	max. 150 m (abgeschirmtes Kabel)
Abmessungen	91x103x118 mm (BxHxT)

Operational mode	D-GF 75-10: Intermittent operation D-GF 75-20: Continuous operation
Safety	Self-monitoring and fail-safe
Power supply	115/230 VAC, 50/60 Hz
Prepurge time	0 s, 30 s, 60 s or 120 s
First safety time (start-up)	3 s, 5 s, 10 s or 15 s
Flame failure response time	1 s, 2 s, 3 s or 5 s
Flame intensity	0...50 µA
Perm. ambient temperature	-20...+60°C
Installation	DIN-rail TS 35
Protection	IP20
Display	LED
Weight	approx. 1 kg
Flame sensor	external flame monitor, ionisation electrode
Length of ionisation cable	max. 150 m (shielded cable)
Dimensions	91x103x118 mm (wxhxd)

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