LAMTEC
Flame Monitoring System

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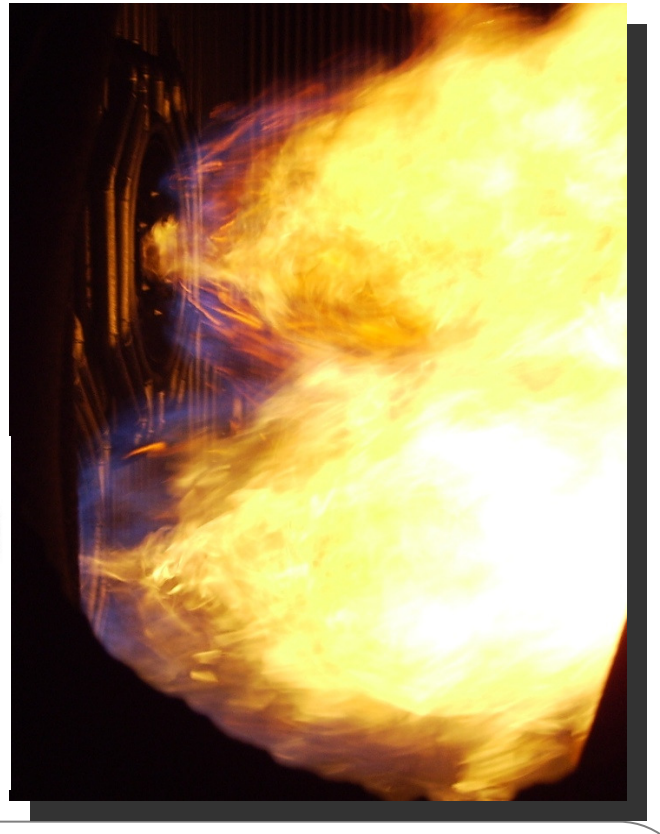
→ *safe*
→ *selective*
→ *reliable*

F200K

F300K



- F200K, SIL 3, according to DIN EN 61508-2 for Ex-Zone I + II
- F300K, SIL 3, according to EN 61508 1-7
- Prototype tested according to DIN EN 230 for oil operation and DIN EN 298 for gas operation
- Compliance with the basic requirements for equipment accessories with safety functions according to directives 97/23/EG (Pressure equipment directive) as well as 2009/142/EG (Gas equipments directive)
- Permission for continuous operation without power limitation

Safety

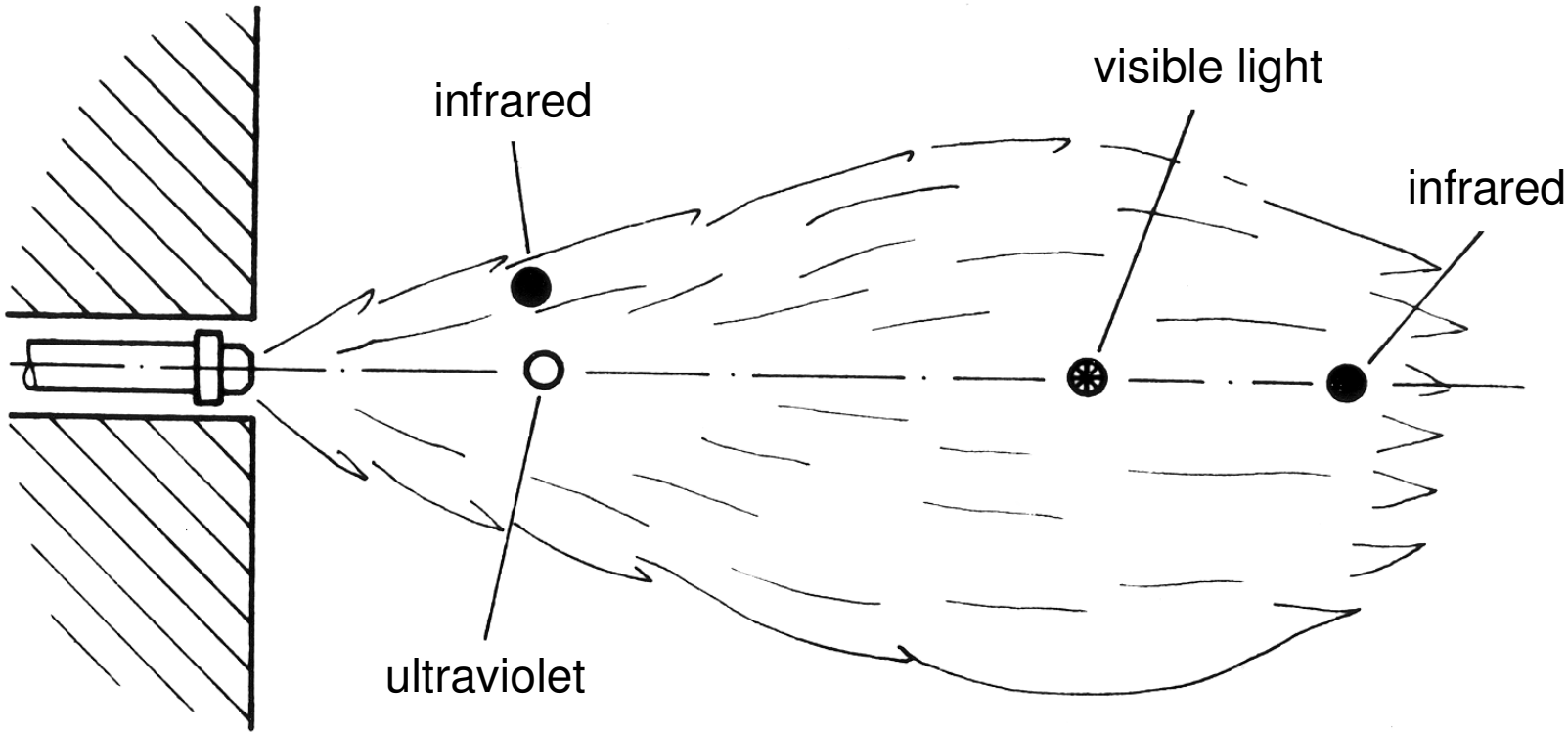
- Self-monitoring principle for equipment with internal fault recognition
- Shutdown after extinguishing of the flame, or if applicable, fault recognition in the specified time for operation mode
- Suppression of parasitic light sources such as lamps as mains frequency radiation sources as well as constant light such as solar radiation
- Definite recognition and reliable differentiation between the flame to be monitored and further flames also directed into the combustion chamber (selectivity in the case of multi-burner furnaces)
- Reliable differentiation between the flame to be monitored and reflection from the combustion chamber (glowing lining, glow, ash, etc. for single- and multi-burner combustion plants)

Reliability

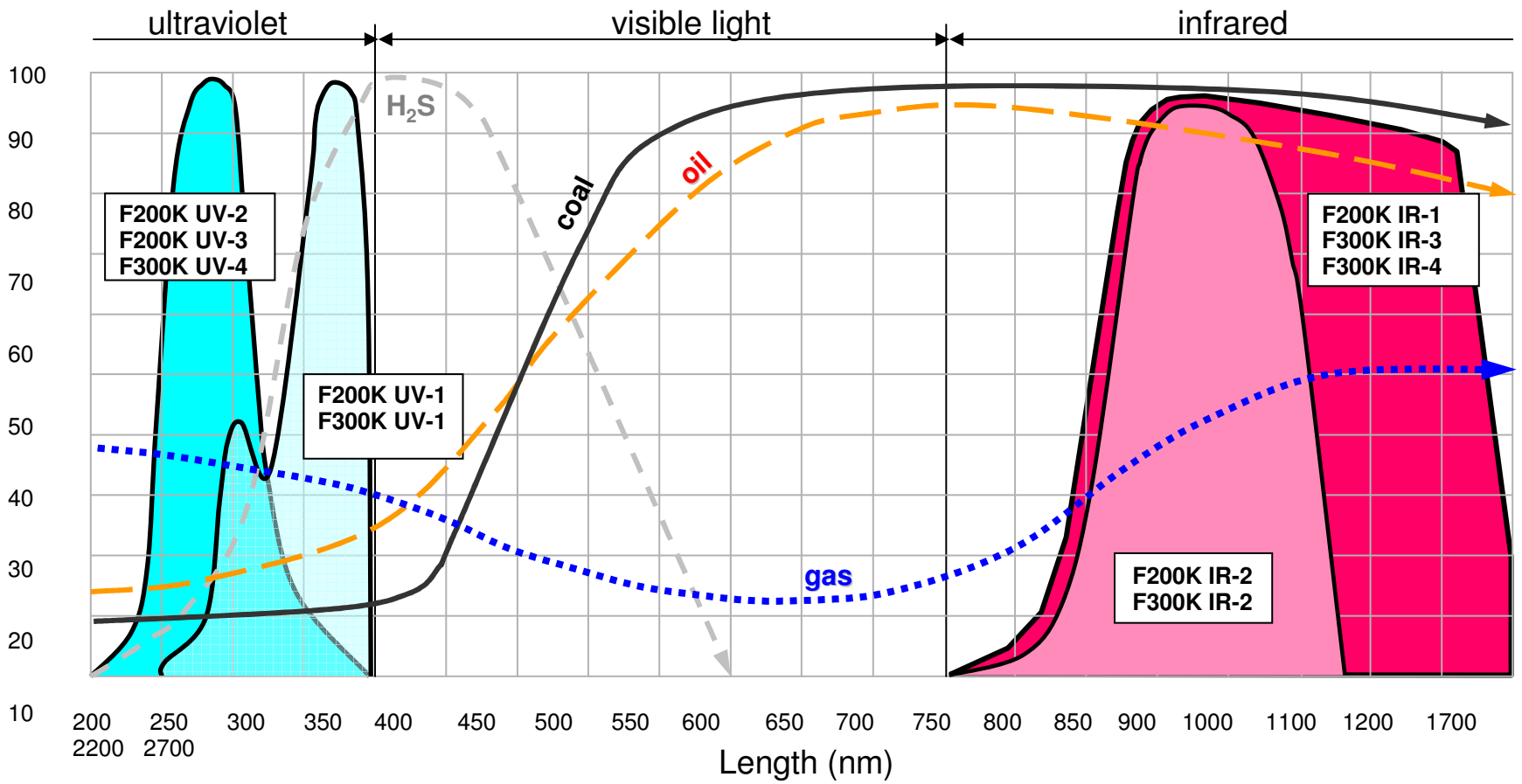
Reliable monitoring of the flame ...

- in complete power range of the burner with different firing-rate conditions
- in the case of ‘flying‘ fuel change or modification of fuel composition
- with and without background fire (coal-fired boilers, waste incineration plants)
- in the case of flue gas recirculation and oxidation-reducing measures (NO_x, SO_x)

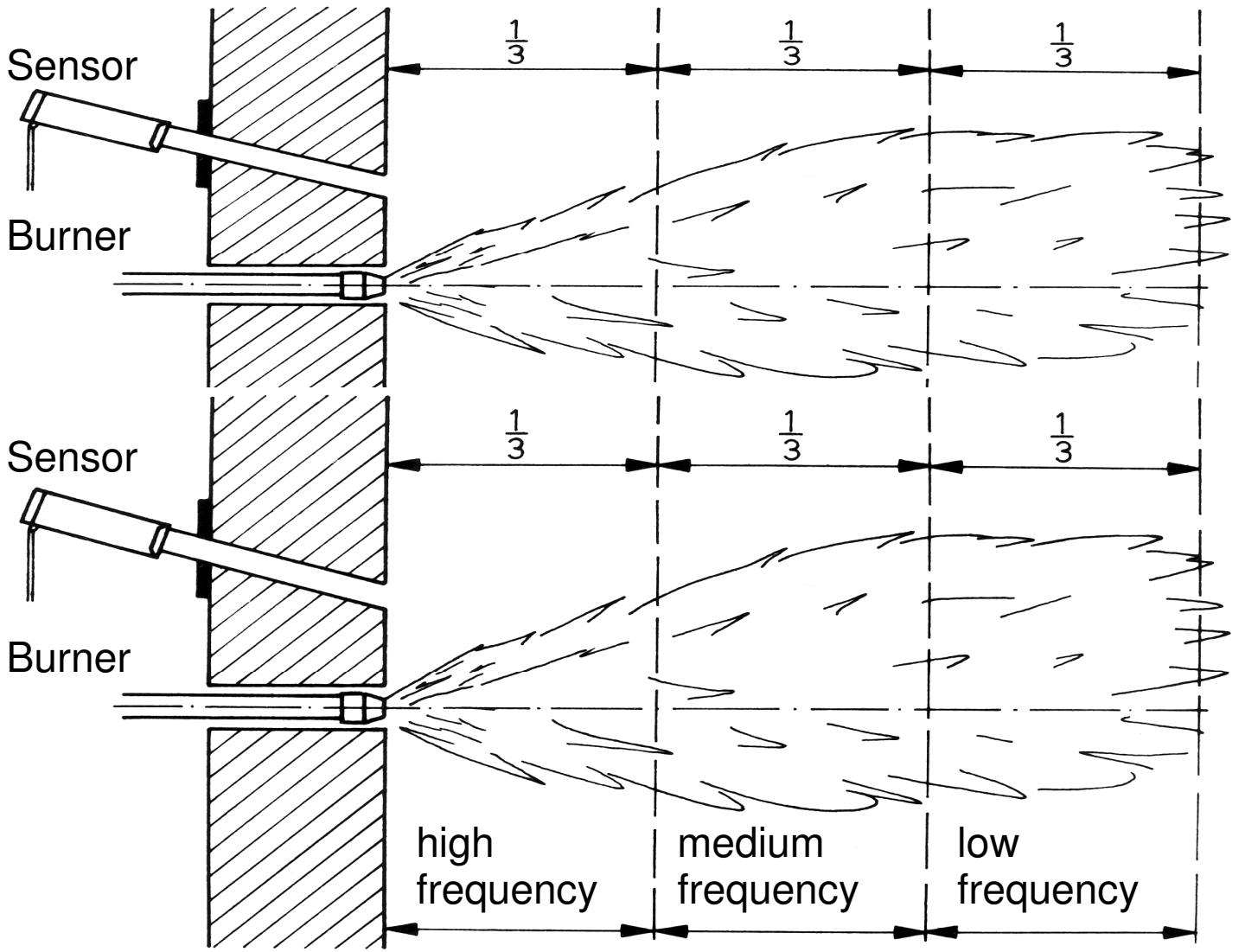
Flame Spectrum



UV- and IR- Criteria for choosing a Flame Sensor



Pulsating Flame Radiation - Frequency



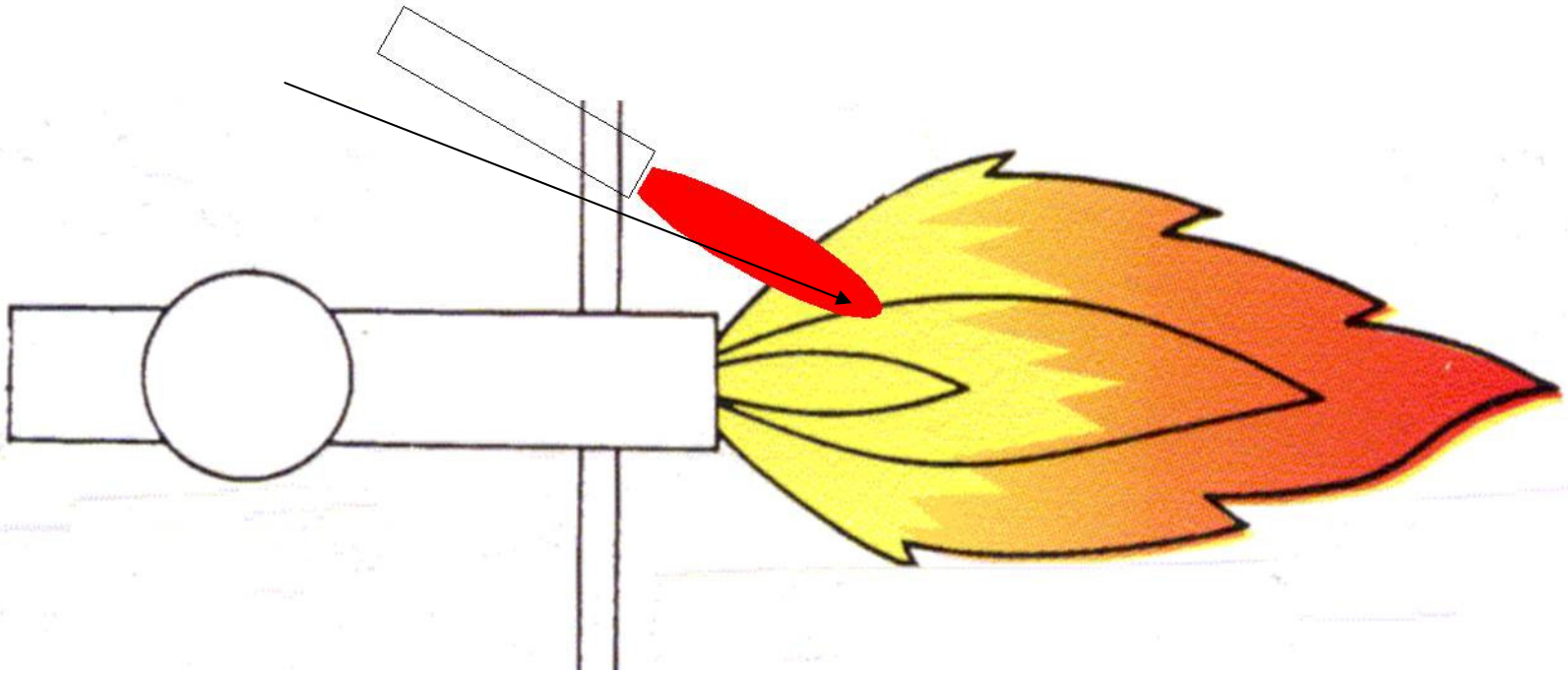
Compact Flame Detector F200K

Compact Flame Detector F300K

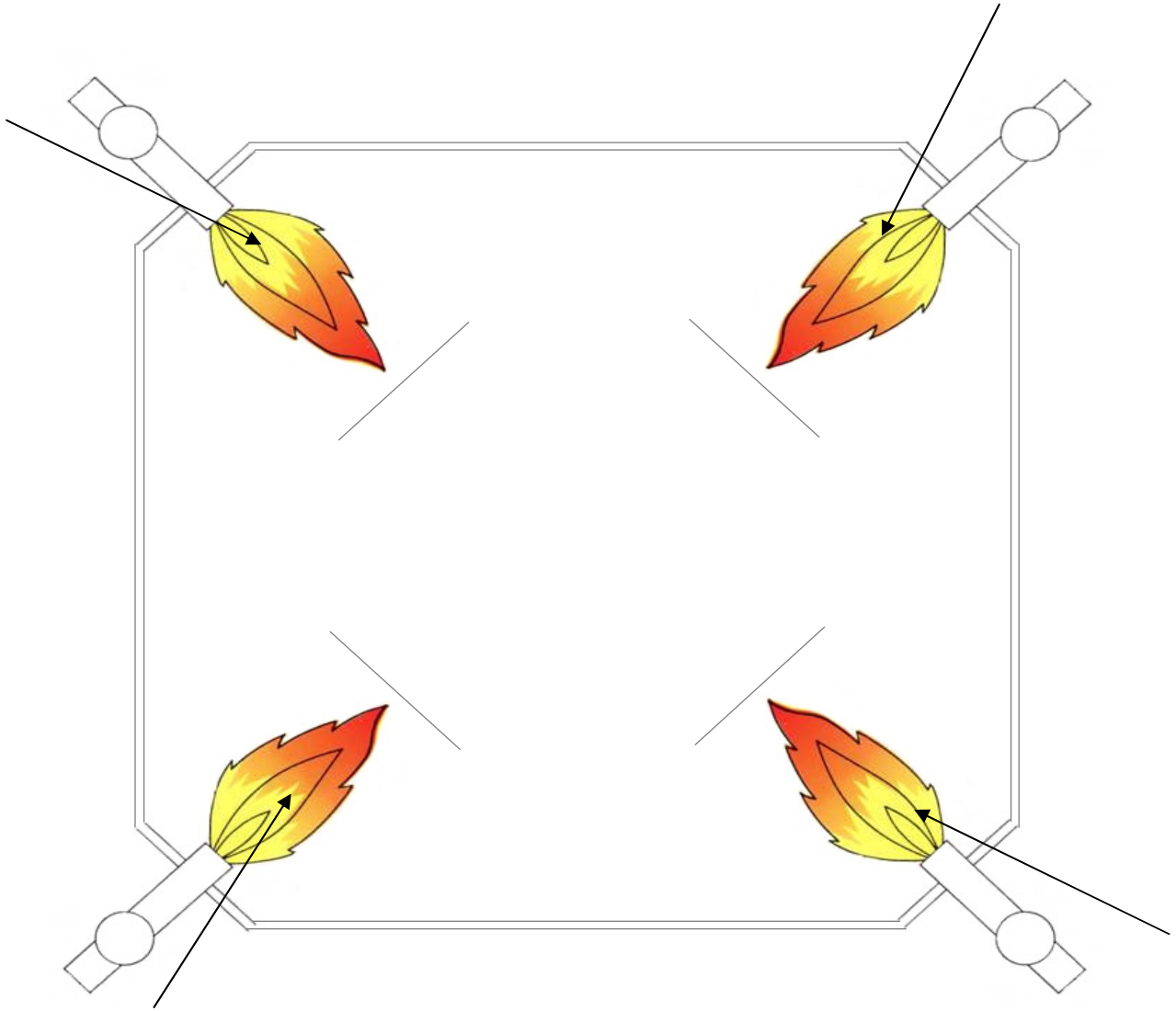
FFS05/FFS06 with FA1/ETAMATIC

- Infrared (IR), Ultraviolet (UV), Ionisation (IO)
- Flame detection for all types of single and multiple- burner applications
- Digital flame rating
- Variable adjustment for all fuels
- High safety
- High reliability
- Best selectivity
- Permision for continuous operation without burner capacity restriction
- Ex-type

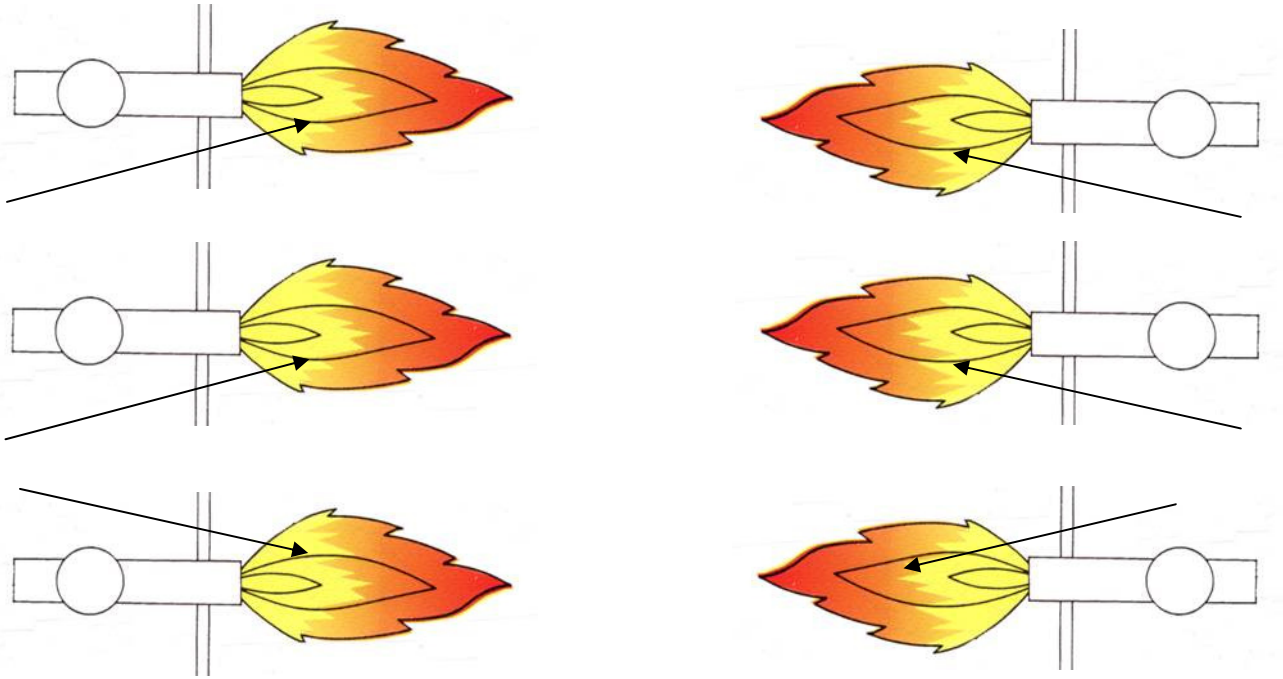
Monitoring of Pilot- and Main Flame



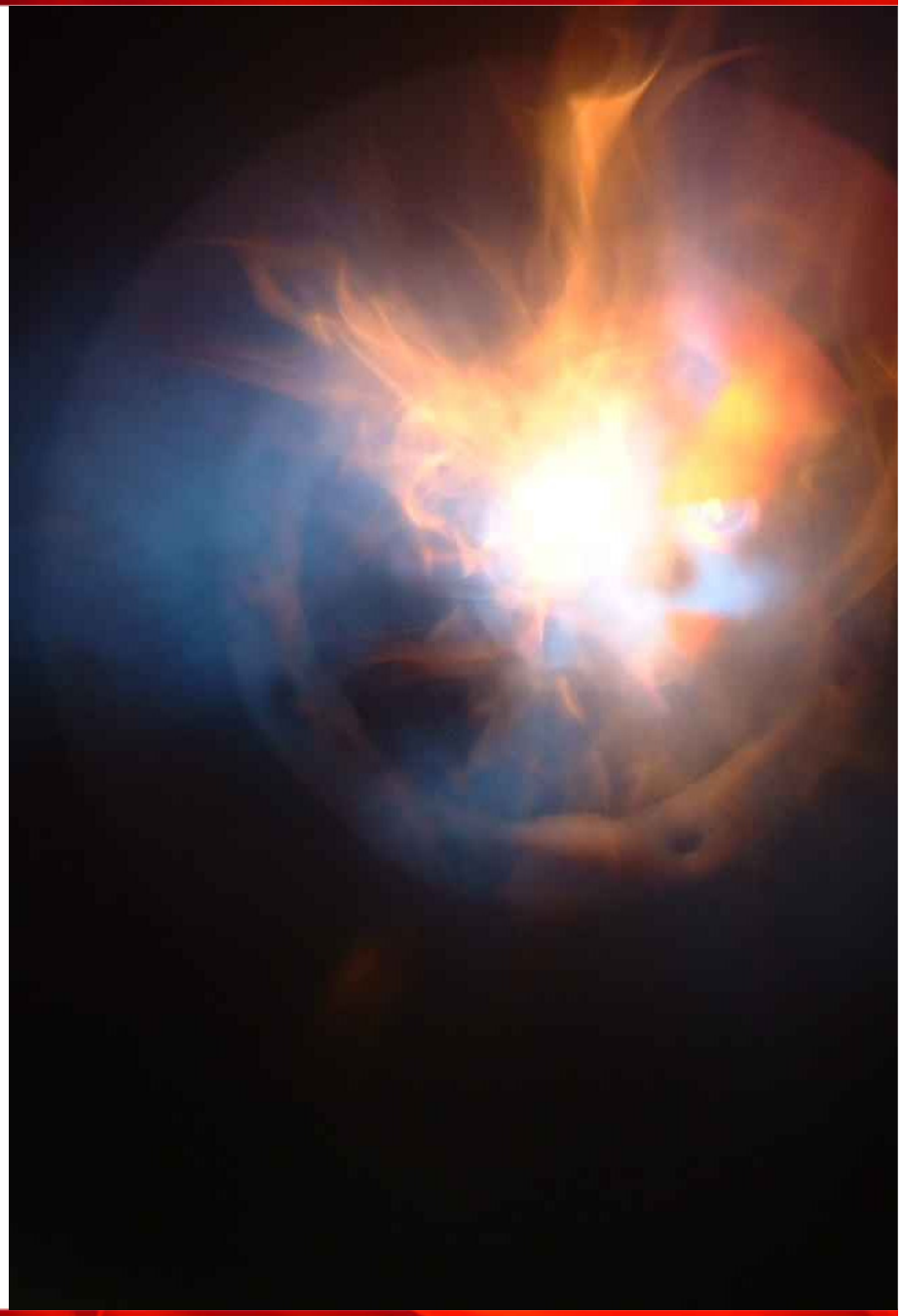
Tangential Burner System



Boxer Combustion System

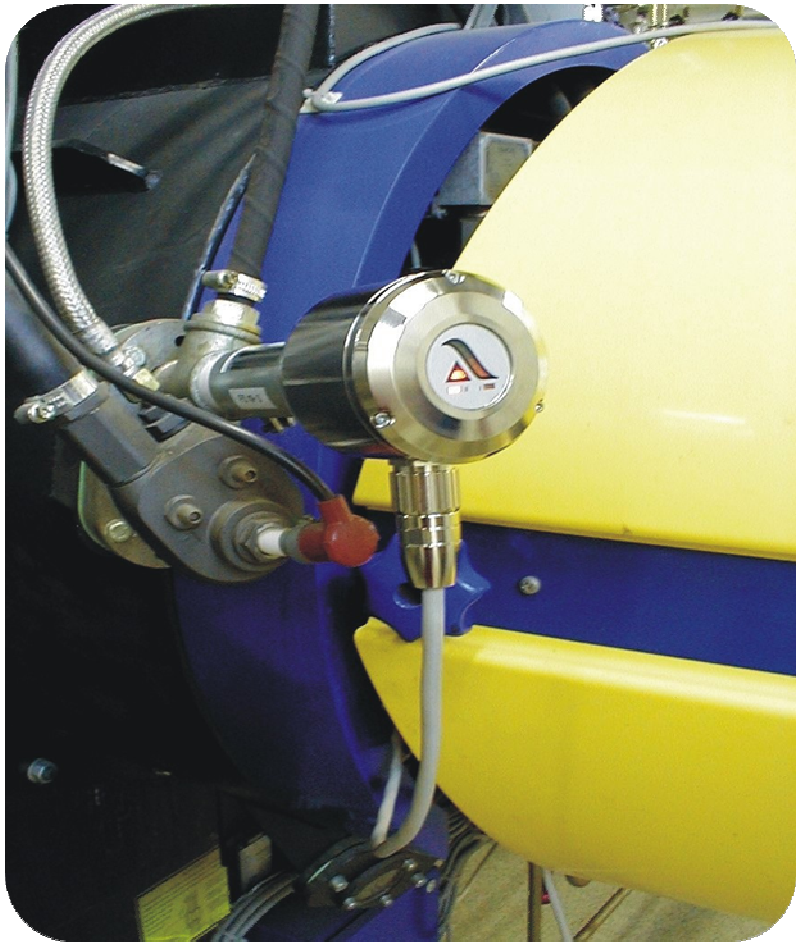


F200K



Compact Flame Monitor F200K

- Multistage sensitivity adjustment
- Switch-on tendency indicator enables an optimum adjustment
- Digital rating of flame frequency
- Electronic self-monitoring
- Start-up suppression (1 s, 0 … 100 %) for background flame signals
- Variable adaptation for different monitoring tasks
- Complies with DIN EN 230 and 298 as well as with basic requirements for equipment parts providing a safety function as specified in directive 97/23/EG
- EX version for zone 1 and 2
- TÜV-type approved



F200K IP 67 UV variants

Type	Spectral range	Selection
		659R60 …
1 UV-1	UV-spectral range 260 – 400 nm	□ 03
2 UV-1	UV-spectral range 260 – 400 nm	□ 04
1 UV-2	UV-spectral range 210 – 380 nm	□ 05
2 UV-2	UV-spectral range 210 – 380 nm	□ 06
1 UV-3	UV-spectral range 210 – 380 nm	□ 13
2 UV-3	UV-spectral range 210 – 380 nm	□ 14
***Mandatory:* Connecting cable**		**659R6112 … R6114**

F200K IP67 IR variants

Type	Spectral range	Selection
		659R60 …
1 IR-1	IR-spectral range 1.200 – 2.800 nm	□ 01
2 IR-1	IR-spectral range 1.200 – 2.800 nm	□ 02
1 IR-1 H 3s	IR-spectral range 1.200 – 2.800 nm	□ 11
2 IR-1 H 3s	IR-spectral range 1.200 – 2.800 nm	□ 12
2 IR-2 F 1s	IR-spectral range 850 – 1.200 nm	□ 00
2 IR-2 F 4s	IR-spectral range 850 – 1.200 nm	□ 08
***Mandatory:* Connecting cable**		**659R6112 … R6114**

F200K for EX-zone 1

	Order No.
Compact flame scanner F200K2 IR-1 Ex, cable 3 m IR-spectral range 1.200 – 2.800 nm	659R60/02/Z1IR/0/0/0/3m
Compact flame scanner F200K2 UV-1 Ex, cable 3 m UV-spectral range 260 – 400 nm	659R60/04/Z1UV//0/0/0/3m
Compact flame scanner F200K2 UV-2 Ex, cable 3 m UV-spectral range 210 – 380 nm	659R60/06/Z1UV/0/0/0/3m
Compact flame scanner F200K2 UV-3 Ex, cable 3 m UV-spectral range 210 – 380 nm	659R60/14//Z1UV/0/0/0/3m
Every F200K Ex (zone 1) are equipped with an optical bracket for screwing and need the screw joint FV30 or FV40	

F200K for EX-zone 2

	Order No.
Compact flame scanner F200K2 IR-1 Ex2 IR-spectral range 1.200 – 1.800 nm	659R60/02/Z2/0/0/0/0
Compact flame scanner F200K2 UV-1 Ex2 UV-spectral range 260 – 400 nm	659R60/04/Z2/0/0/0/0
Compact flame scanner F200K2 UV-2 EX2 UV-spectral range 210 – 380 nm Ex2	659R60/06/Z2/0/0/0/0
Compact flame scanner F200K2 UV-3 Ex2 UV-spectral range 210 – 380 nm	659R60/14/Z2/0/0/0/0
Mandatory: **Connecting cable**	**659R6112 ... R6114**

IR- or UV- spectra in 2 basic versions

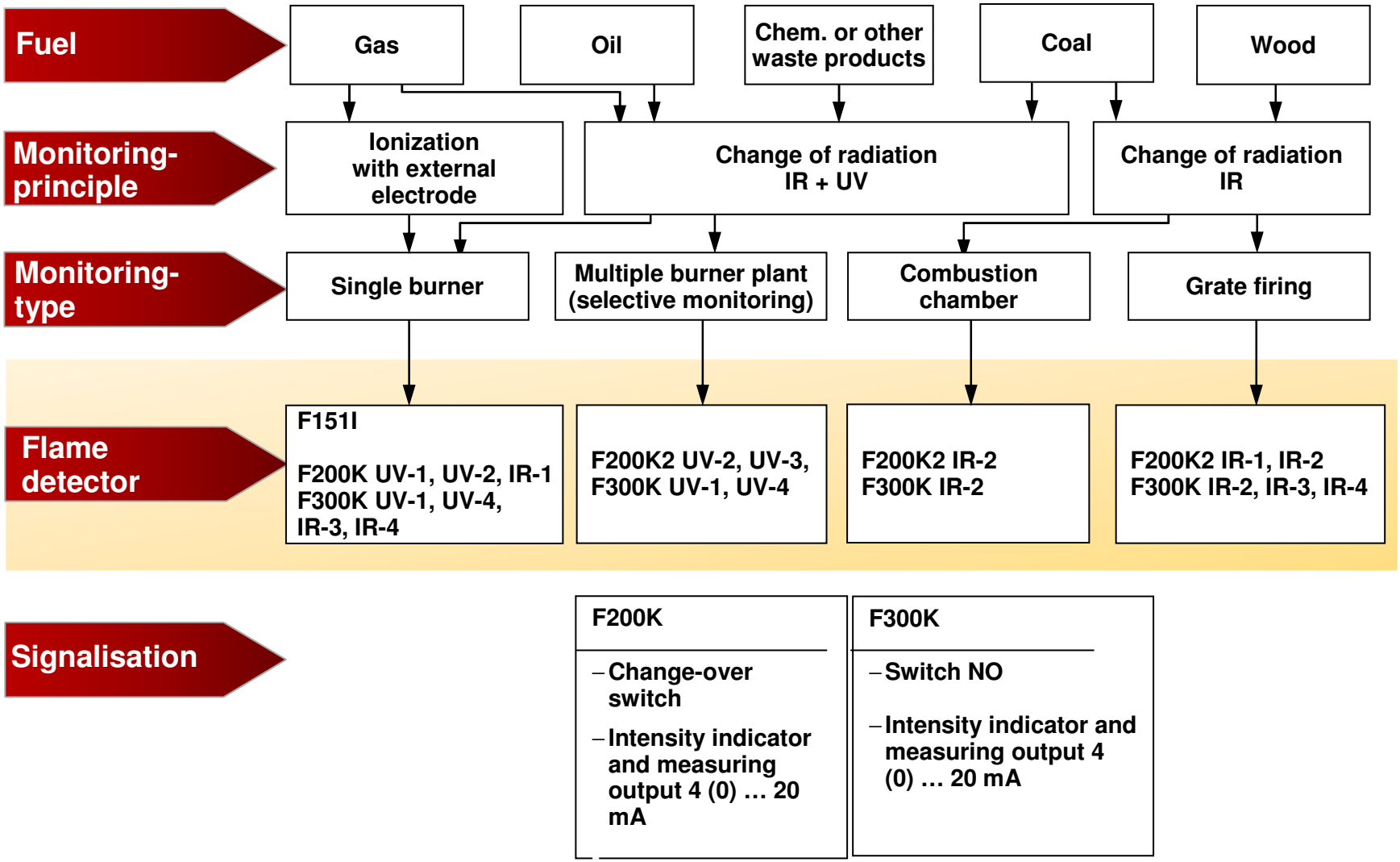
	F200K1 …	F200K2 …
Sensitivity	1 sensitivity range 6-stage	2 sensitivity range increased sensitivity in range 2, external reversible, 6-stage each
Frequency range	10 ... 190 Hz [1)]	10/20/30 ... 190 Hz [1)]

1) with stop band 45 … 55 Hz and 90 … 110 Hz[2)]
2) valid in power grid with 50 Hz mains frequency

Selection Criteria F200K

Sensor type	Spectral radiation range	Application - fuel
F200K1 UV-1/ F200K2 UV-1	260 ... 400 nm	Oil, gas
F200K1 UV-2 F200K2 UV-2 F200K1 UV-3 F200K2 UV-3	210 ... 380 nm	Oil, gas (Speciality gas such refinery and blast furnace gas)
F200K1 IR-2 F200K2 IR-2	850 … 1200 nm	Monitoring of combustion chamber and flame-cut edge (coal, wood)
F200K1 IR-1/ F200K2 IR-1	1200 ... 2800 nm	• Oil, gas, wood, coal, combustion with high flue gas recirculation • Yellowish waste gases without UV-radiation or protective barriere of UV-proportion by water vapour, dust

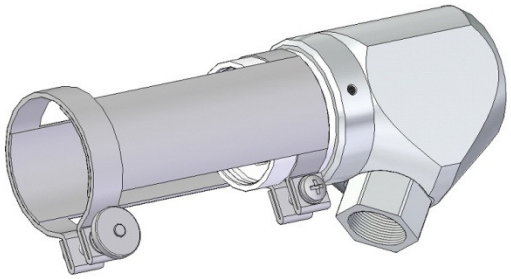
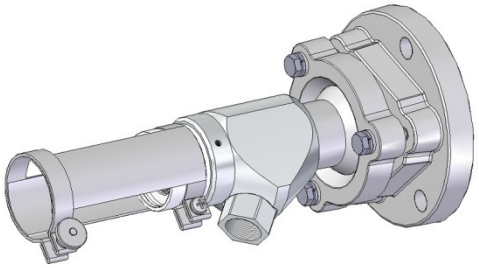
Criteria for selection of flame scanner



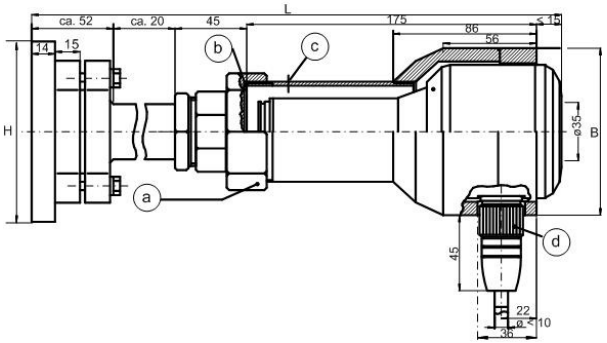
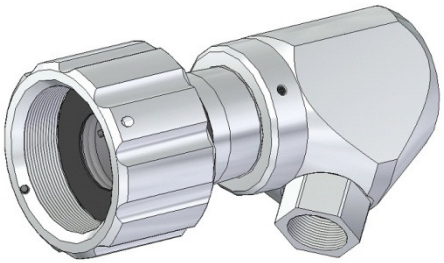
Accessories

	Order No.
Power supply unit FN20 (230 VAC or 115 VAC), with 230 V relay output for F200K	659R6010
Power supply unit FN20 (230 VAC or 115 VAC), with 230 V relay output for F200K inside housing IP65	659R6010/G
Connection/extension cable, length 3 m, for compact flame scanner F200K1(2)	659R6112
Connection-/extension cable, length 5 m, for compact flame scanner F200K1(2)	659R6113
Connection-/extension cable, length 10 m, for compact flame scanner F200K1(2)	659R6114

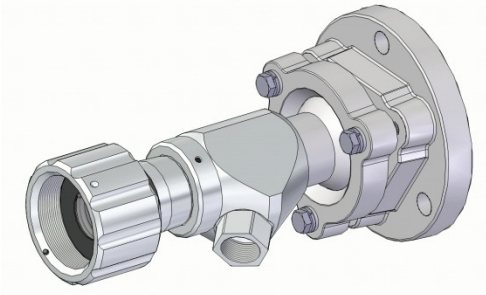
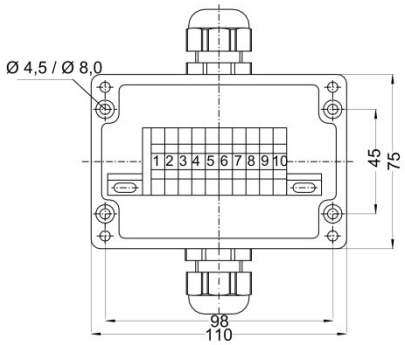
Accessories

		Order No.
Holing bracket FH30-10 for FFS05 … / F200K … (without ball-and-socket joint, 45 °purge air connection)		659S1500
Adjusting bracket FH40-10 for FFS05 … / F200K … (with ball-and-socket joint, 45 °purge air connection)		659S1600

Accessories

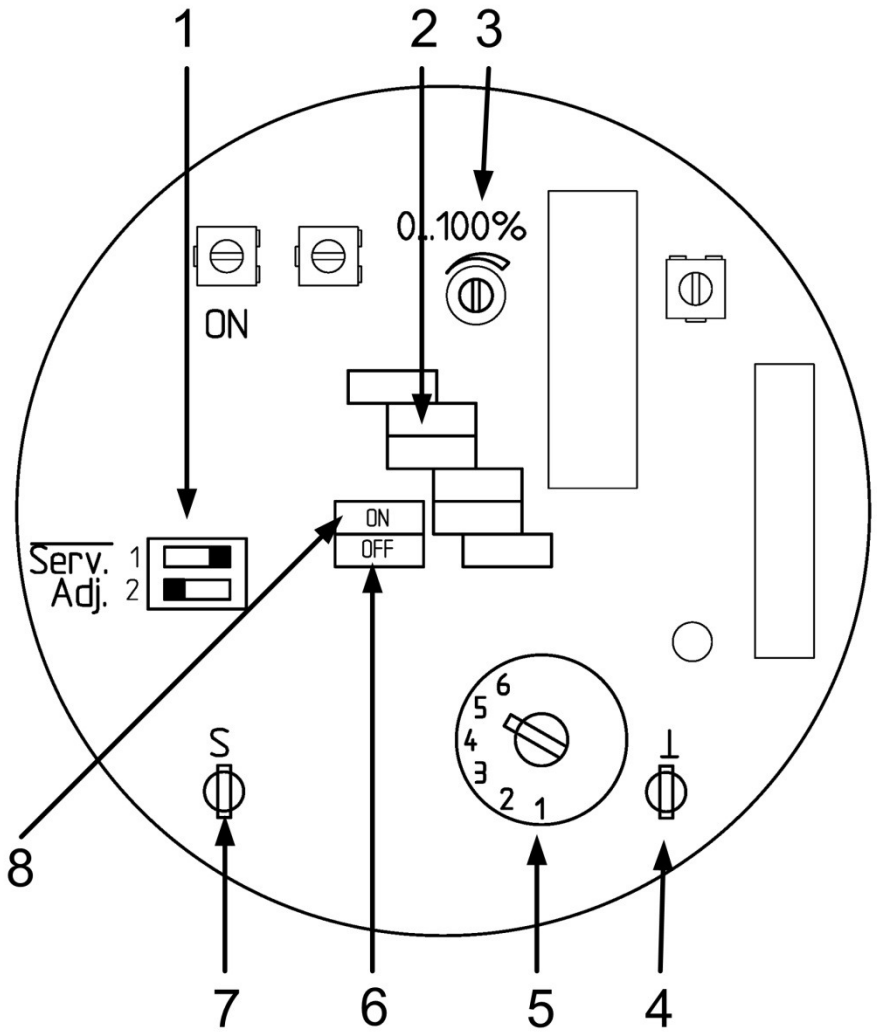
		Order No.
Cooling air housing FS51 for F200K … (with ball-and-socket joint)		659R6107
Screw joint FV30-10 with purge air connection for FFS05 … / V, F200K … / V, F200K … Ex		659S1200

Accessories

		Order No.
Screw joint FV40-10 With purge air connection and ball-and-socket joint for FFS05 … /V, F200K … /V, F200K ..		659S1300
Connection housing FG24 Ex (IP66), for serial FFS05 … Ex and F200K2 … Ex		659R0111

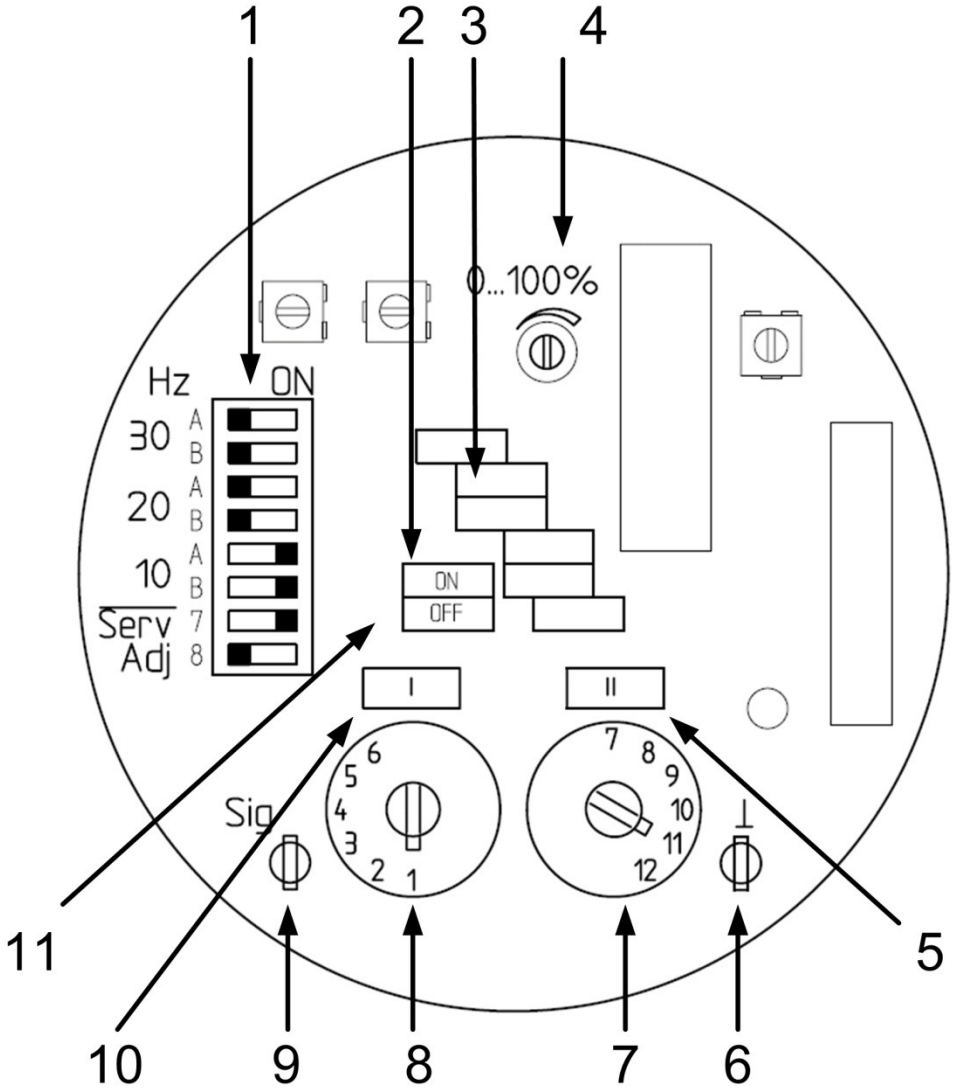
Direct voltage	24 VDC ± 20 %
Power consumption	≤ 4 W
Output contact	permissible switching voltage - max. 50 VDC, min. 6 VAC/DC permissible current switching - max. 0,5 A, min. 1,0 mA
Safety time “operation“	t ≤ 1 s (standard), t ≤ 3 s (on request, at the factory)
Mode of operation	continuous operation
Class of protection	IP67
Ambient temperature	- 20 ... + 60 °C

Delivery status



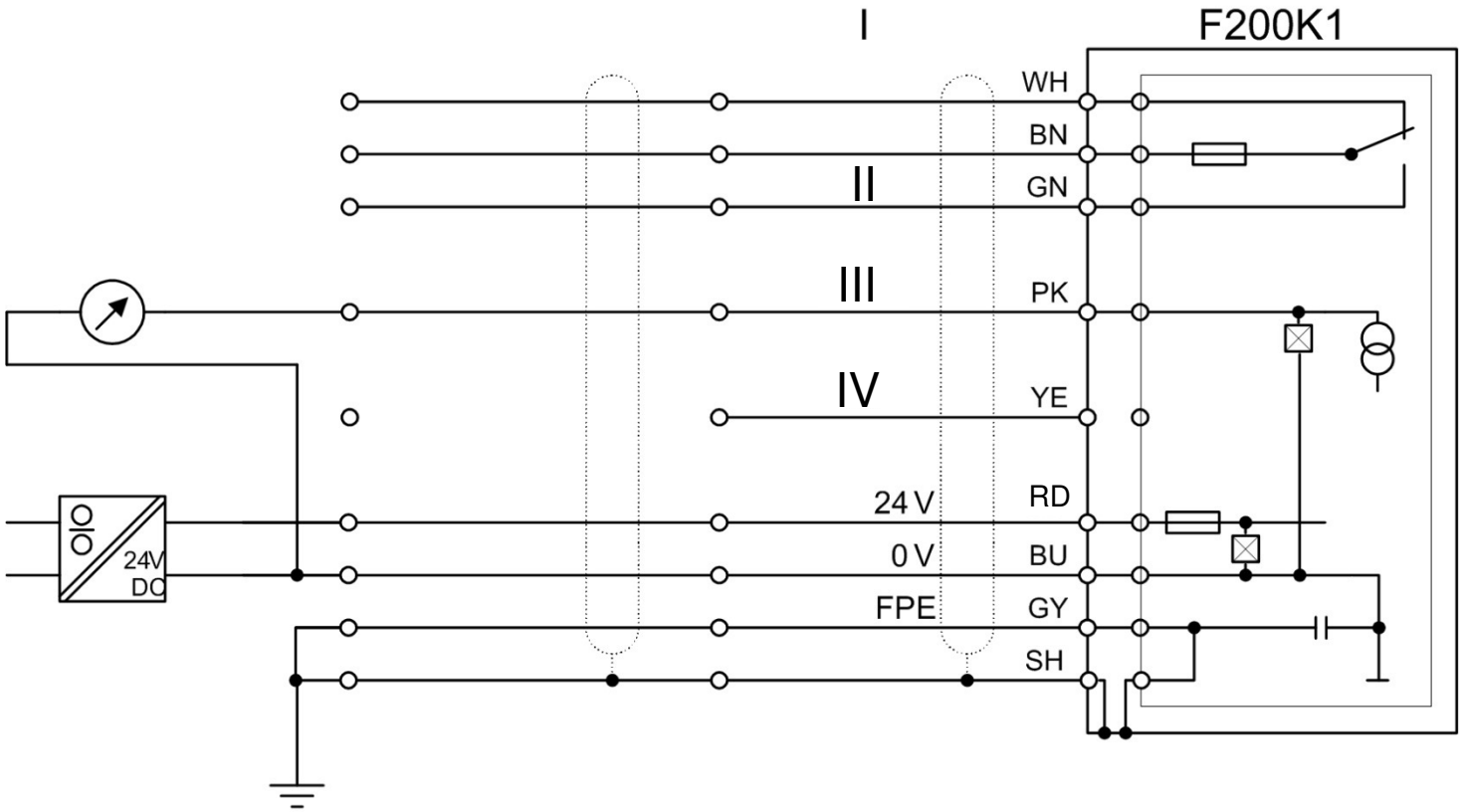
1	**SERV**.- Service- switch **Adj.**- Adjust
2	**Intensity indicator** for flame signal in the range of 0 ... 100 %
3	**Start-up suppression** 0 ... 100 %
4/7	**Measuring points** to measure the flame radiation received by the F200K
5	**Sensitivity switch** for gradual increase and/or decrease of sensitivity (amplification) of the compact flame detector in 6 levels
6	**LED (red):** Indication „Flame OFF“ state
8	**LED (green):** Indication „Flame ON“ state

Delivery status



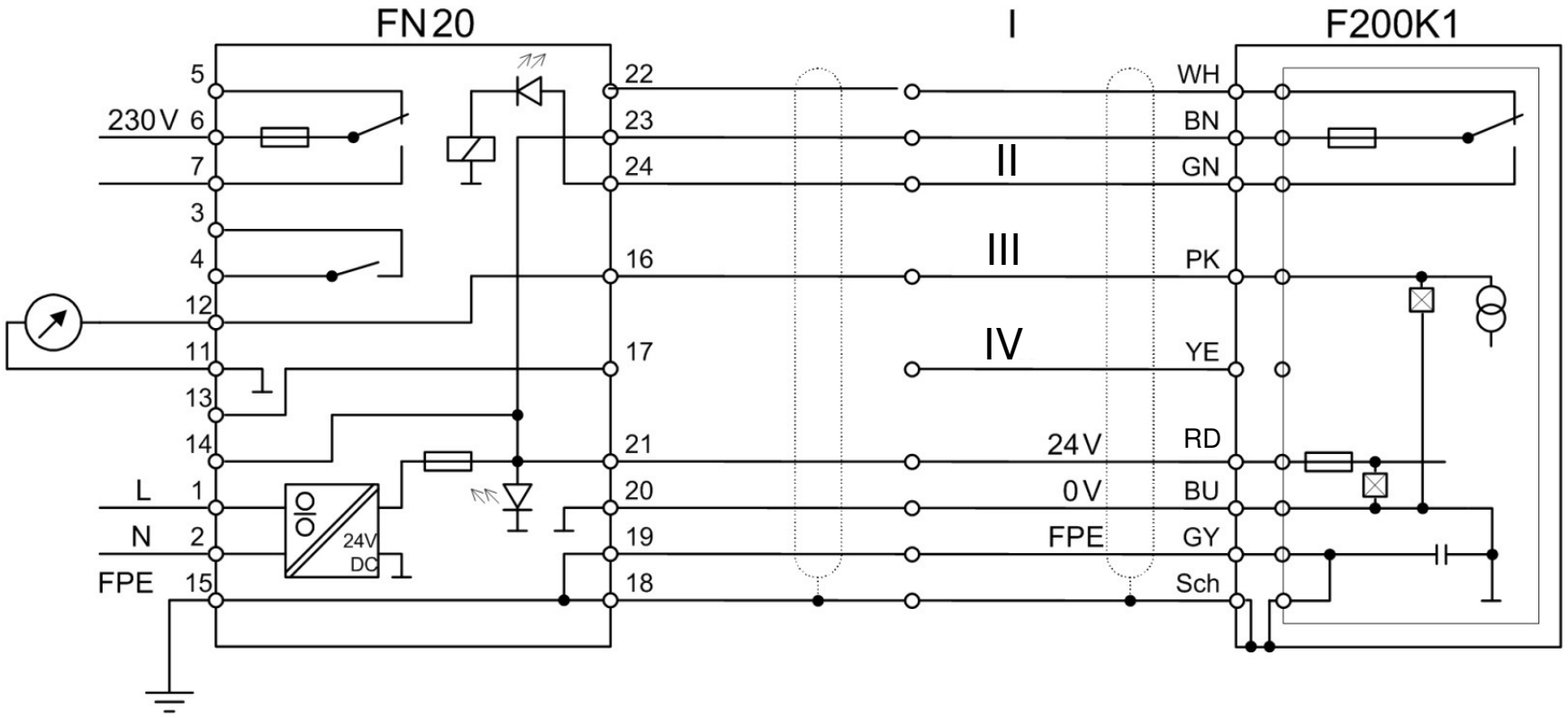
1	**SERV**.- Service- switch **Adj.**- Adjust **Frequency switch**
2	**LED (green):** Indication „Flame ON“ state
3	**Intensity indicator** for flame signal in the range of 0 ... 100 %
4	**Start-up suppression** 0 ... 100 %
5/10	**LED (yellow)**, only for F200K2, lights for actice range
6/9	**Measuring points** to measure the flame radiation received by the F200K
7	**Sensitivity switch for range II** (range of higher sensitivity), for gradual increase and/or decrease of sensitivity (amplification) of the compact flame detector in 6 levels
8	**Sensitivity switch for range I** (range of normal sensitivity), for gradual increase and/or decrease of sensitivity (amplification) of the compact flame detector in 6 levels
11	**LED (red):** Indication „Flame OFF“ state

Connection assignment F200K1 (24 VDC)



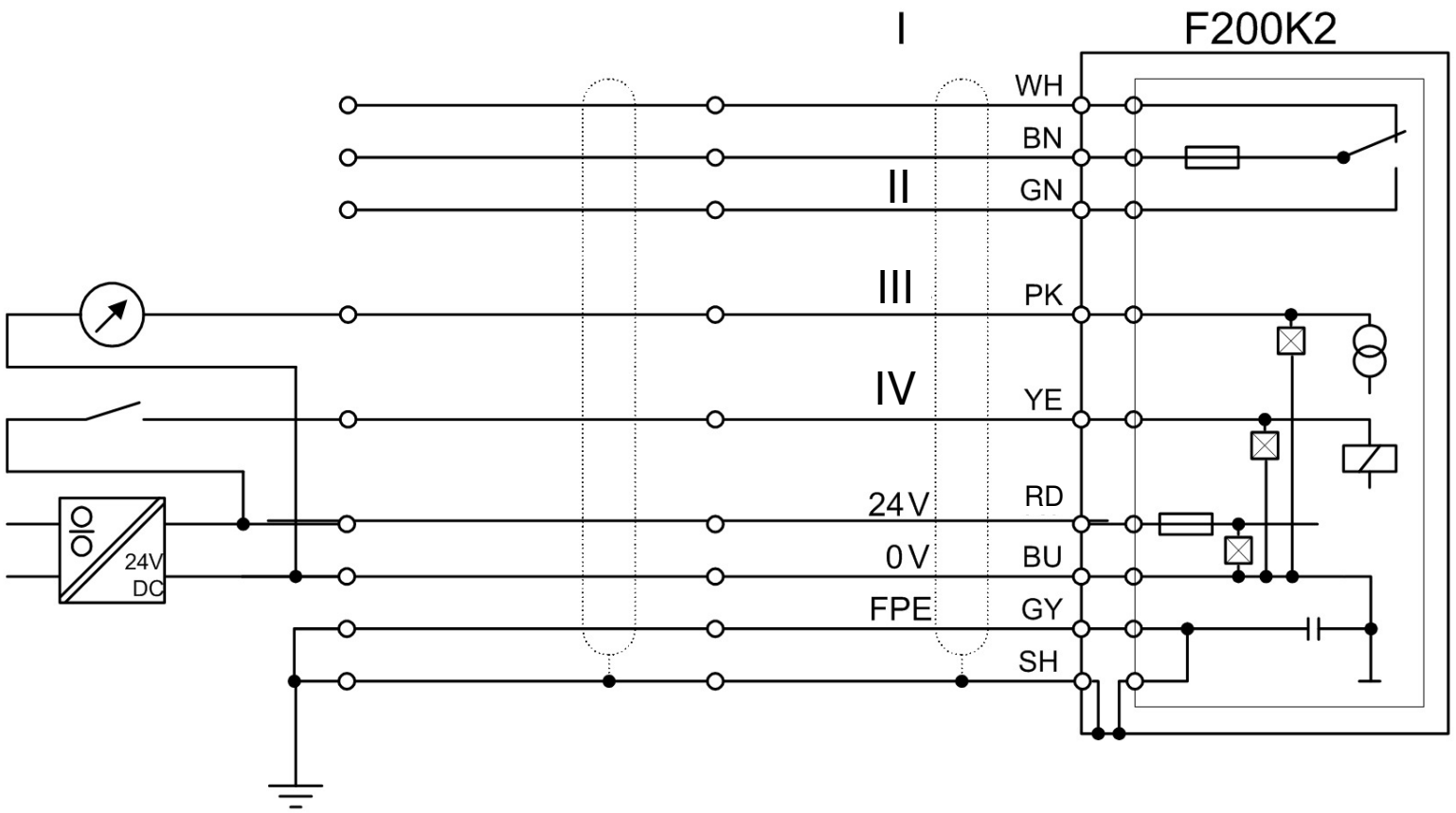
I	– connection cable	**WH**	– white	**PK**	– pink	**BU**	– blue
II	– Flame signal	**BN**	– brown	**YE**	– yellow	**GY**	– grey
III	– 4(0) … 20 mA	**GN**	– green	**RD**	– red	**SH**	– Shield
IV	– Range, F200K1 without any function						

Connection assignment F200K1 (230 VAC, with power pack FN20)



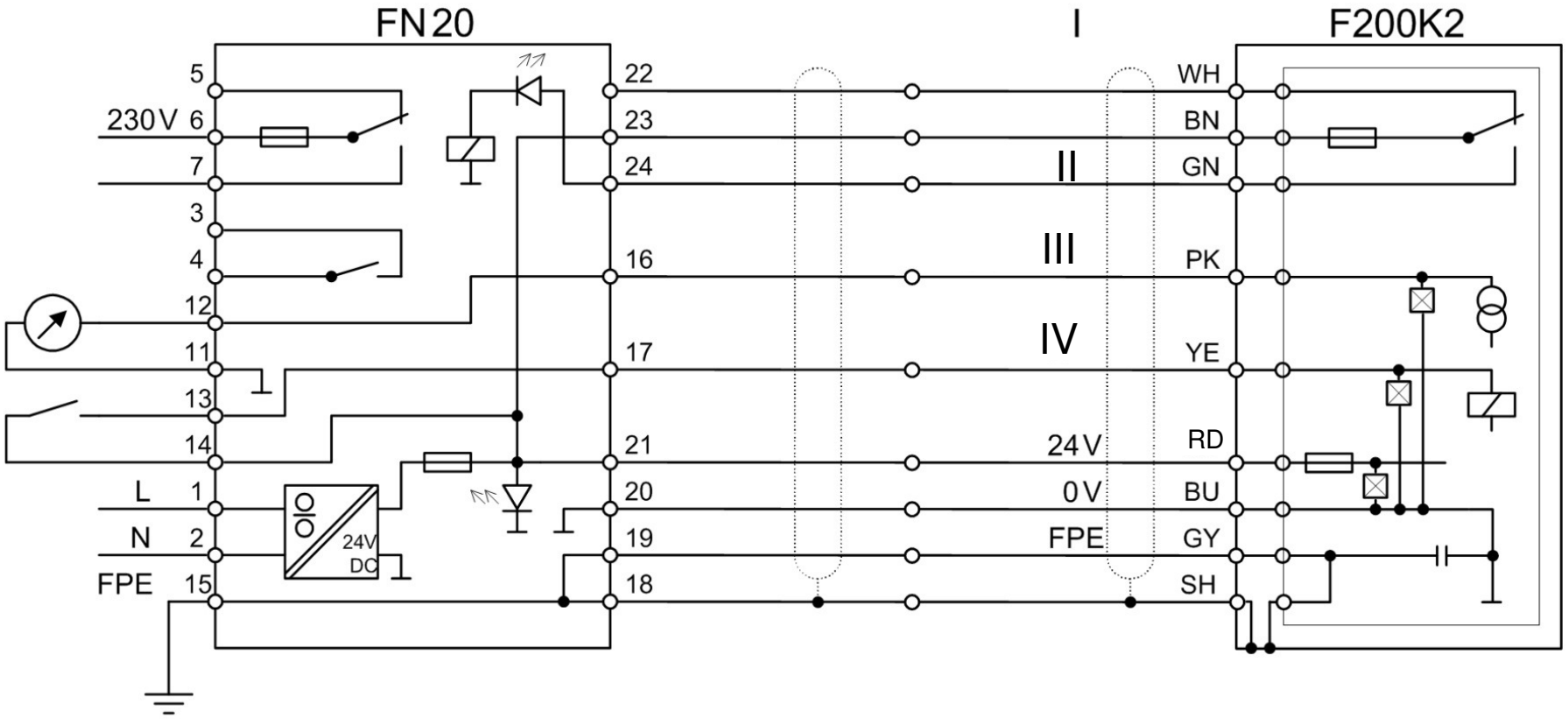
I	– connection cable	**WH**	– white	**PK**	– pink	**BU**	– blue
II	– Flame signal	**BN**	– brown	**YE**	– yellow	**GY**	– grey
III	– 4(0) … 20 mA	**GN**	– green	**RD**	– red	**SH**	– Shield
IV	– Range, F200K1 without any function						

Connection assignment F200K2 (24 VDC)



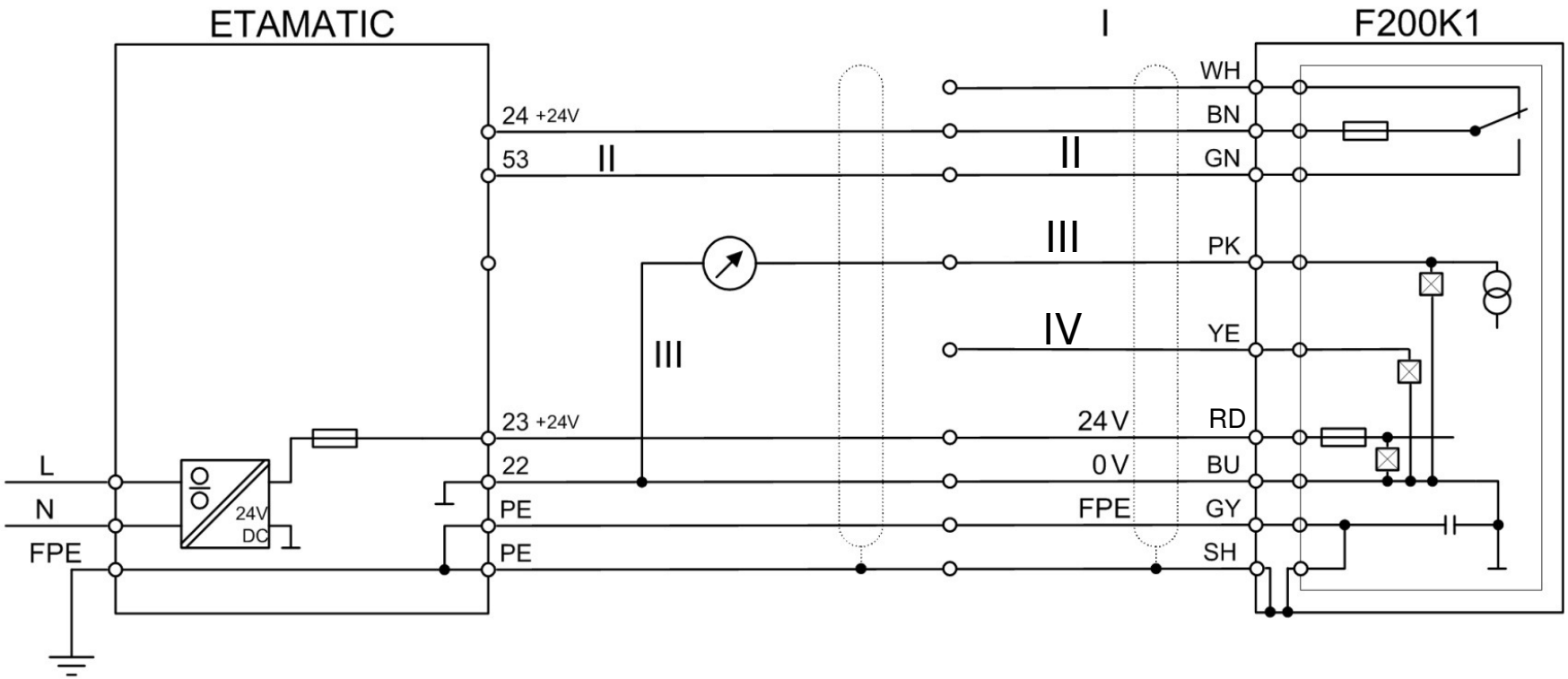
I	– connection cable	**WH**	– white	**PK**	– pink	**BU**	– blue
II	– Flame signal	**BN**	– brown	**YE**	– yellow	**GY**	– grey
III	– 4(0) … 20 mA	**GN**	– green	**RD**	– red	**SH**	– Shield
IV	– Range						

Connection assignment F200K2 (230 VAC, mit Netzteil FN 20)



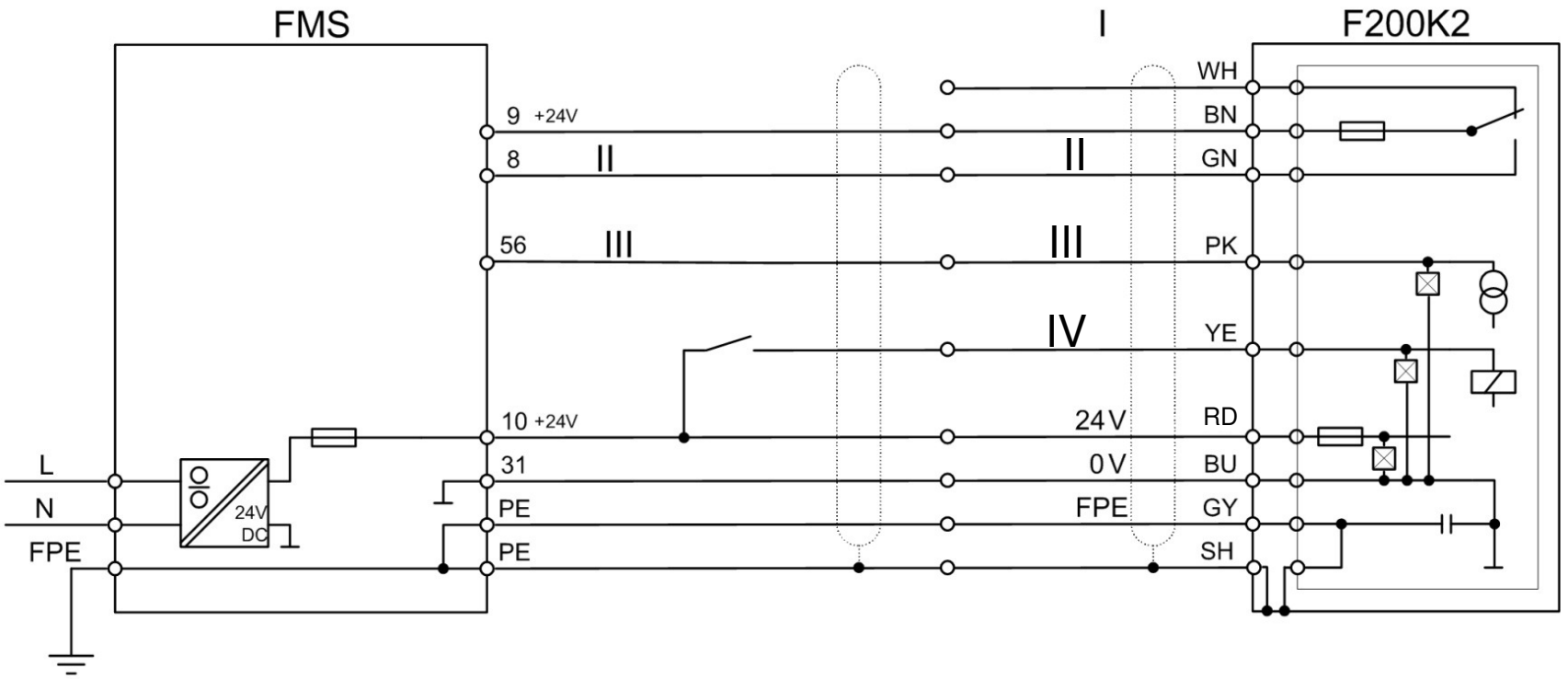
I	– connection cable	**WH**	– white	**PK**	– pink	**BU**	– blue
II	– Flame signal	**BN**	– brown	**YE**	– yellow	**GY**	– grey
III	– 4(0) … 20 mA	**GN**	– green	**RD**	– red	**SH**	– Shield
IV	– Range						

Interconnection with ETAMATIC



I	– connection cable	**WH**	– white	**PK**	– pink	**BU**	– blue
II	– Flame signal	**BN**	– brown	**YE**	– yellow	**GY**	– grey
III	– 4(0) … 20 mA	**GN**	– green	**RD**	– red	**SH**	– Shield
IV	– Range, F200K1 without any function						

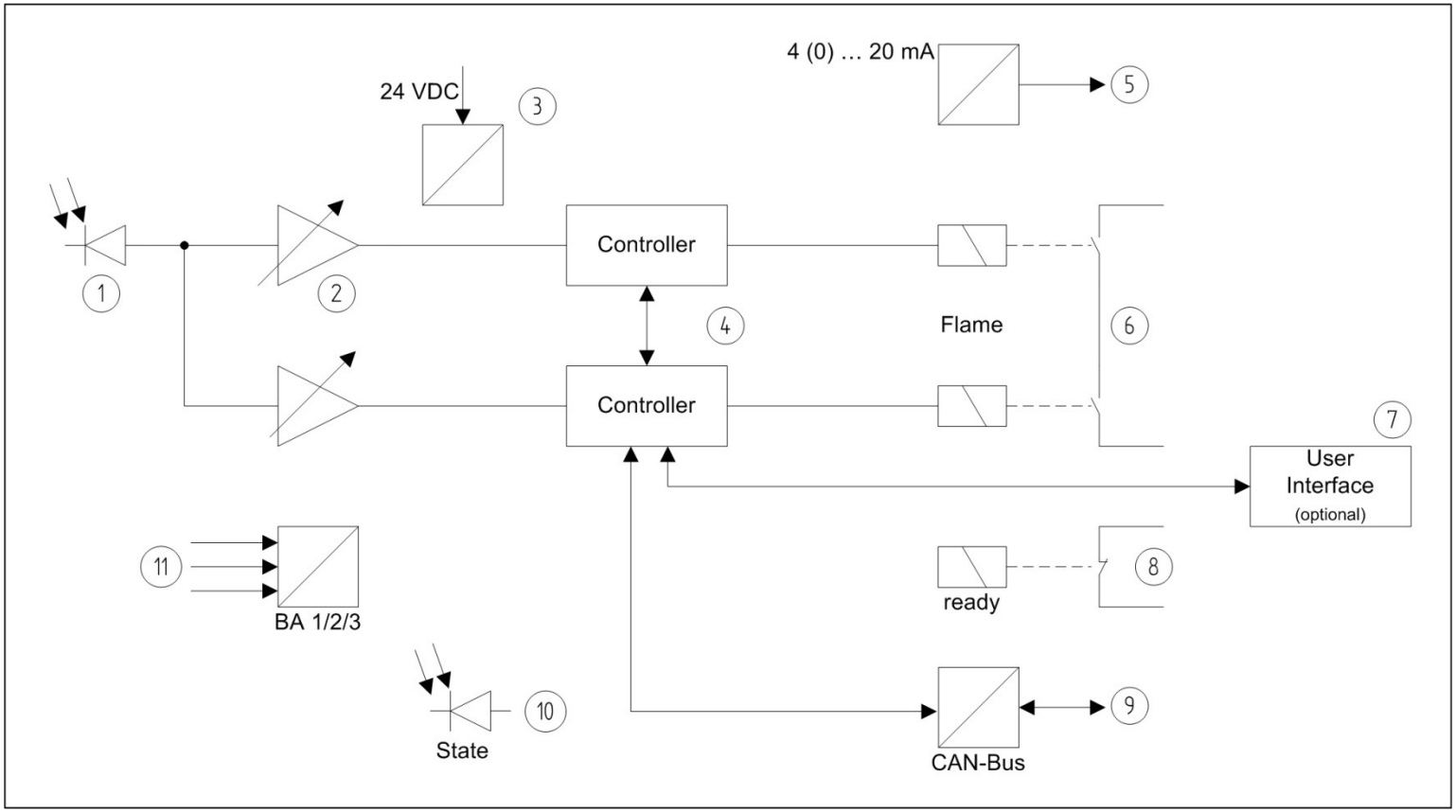
Interconnection with FMS



I	– connection cable	**WH**	– white	**PK**	– pink	**BU**	– blue
II	– Flame signal	**BN**	– brown	**YE**	– yellow	**GY**	– grey
III	– 4(0) … 20 mA	**GN**	– green	**RD**	– red	**SH**	– Shield
IV	– Range, F200K1 without any function						

F300K

- Integrated flame sensor and circuit amplifier; class of protection IP67
- Semiconductor- sensors for different spectral ranges UV/IR
- Evaluation of digital flame frequency, in 14 selectable ranges 5 … 210 Hz
- 13 amplification levels selectable
- Self-learning function flame ON/OFF and automatic evaluation
- Menu-driven operation with graphic display
- Operation without opening the housing via integrated or external User Interface or F300K Remote Software
- Status indication via display and LED
- Communication via CAN- Bus with connecting cable
- 2 operating levels: standard, expert
- 3 selectable modes



1. Semiconductor sensor
2. Amplifiers
3. Power supply
4. Microcontrollers
5. Measuring output for intensity
6. Flame relay
7. Integrated operating unit (UI)
8. Ready for operation
9. CAN bus for parameterisation and messages
10. LED status display
11. Mode selection

F300K without integrated User Interface

Type	Spectral range	Selection
UV-1	UV-spectral range 260 – 400 nm	□ 01
UV-4	UV-spectral range 215 – 360 nm	□ 04
IR-2	IR-spectral range 850 – 1.200 nm	□ 10
IR-3	IR-spectral range 1.000 – 1.700 nm	□ 11
IR-4	IR-spectral range 1.000 – 2.200 nm	□ 12
Mandatory: **for adjustment of User Interface or F300K Remote Software**		
Connecting cable		**659N0500 … N0502**

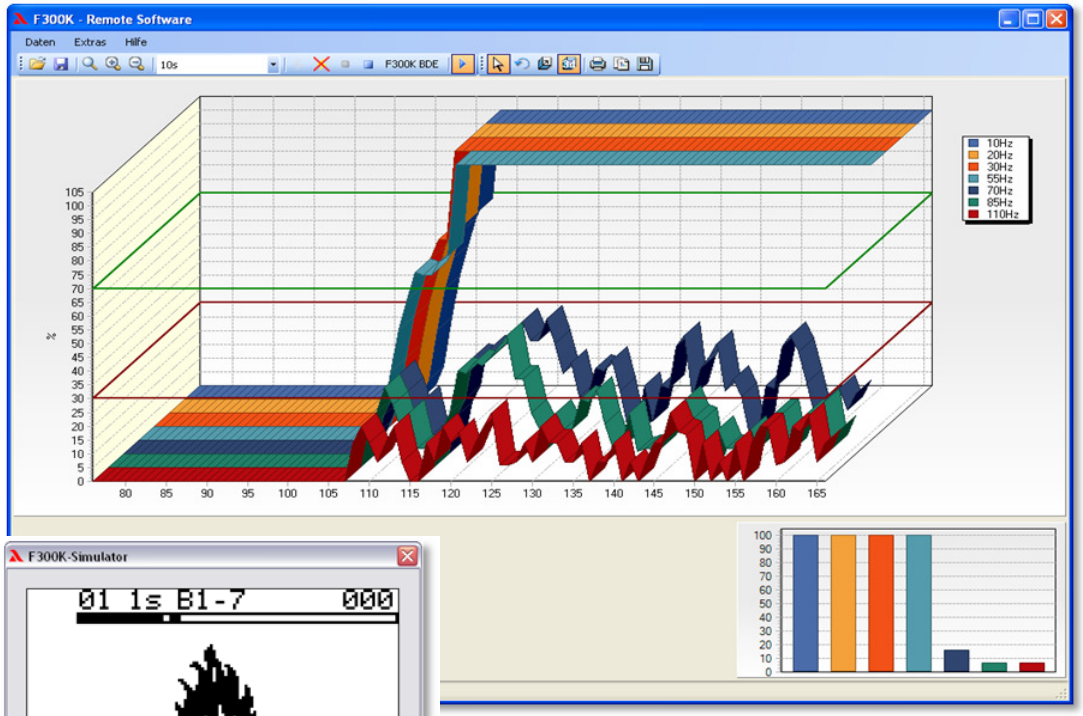
F300K with integrated User Interface

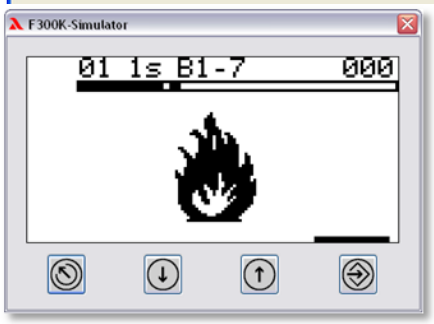
	Order No.
Compact flame scanner F300K UV-1 UI UV-spectral range 260 – 400 nm	659A50/01/UI/0/0
Compact flame scanner F300K UV-4 UI UV-spectral range 215 – 360 nm	659A50/04/UI/0/0
Compact flame scanner F300K IR-2 UI IR-spectral range 850 – 1.200 nm	659A50/10/UI/0/0
Compact flame scanner F300K IR-3 UI, IR-spectral range 1.000 – 1.700 nm	659A50/11/UI/0/0
Compact flame scanner F300K IR-4 UI, IR-spectral range 1.000 – 2.200 nm	659A50/12/UI/0/0
Every F300K is designed for EX-zone 2 in standard	
***Mandatory:* Connecting cable**	**659N0500 ... N0502**

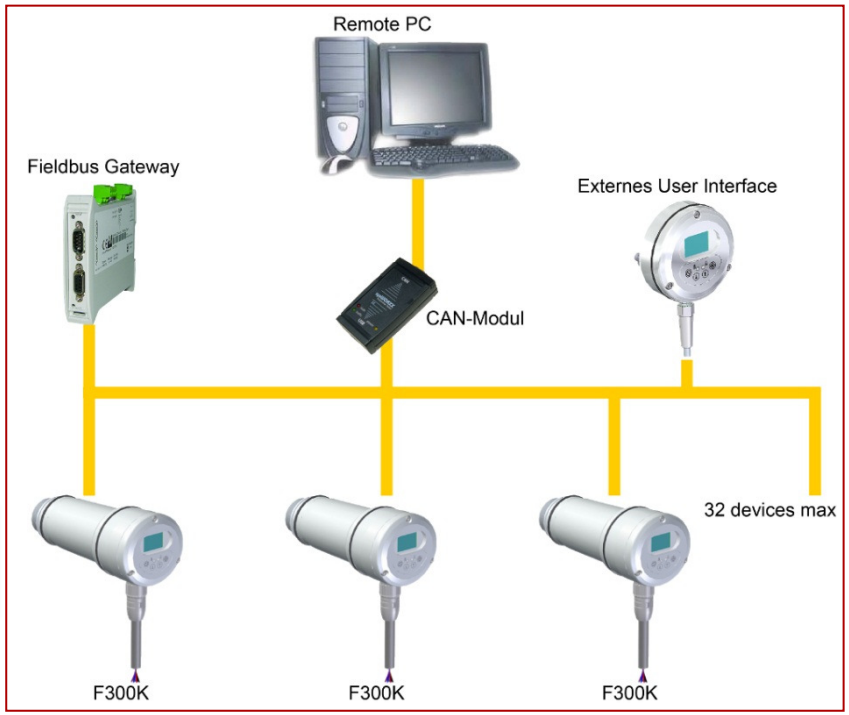
External operating unit (User Interface)

	Order No.
External operating unit (User Interface) FB30-00, portable, incl. connecting cable, length 3 m	659M2100
External operating unit (User Interface) FB30-10, for panel mounting, incl. connecting cable, length 2 m	659M2101

F300K- Remote- Software





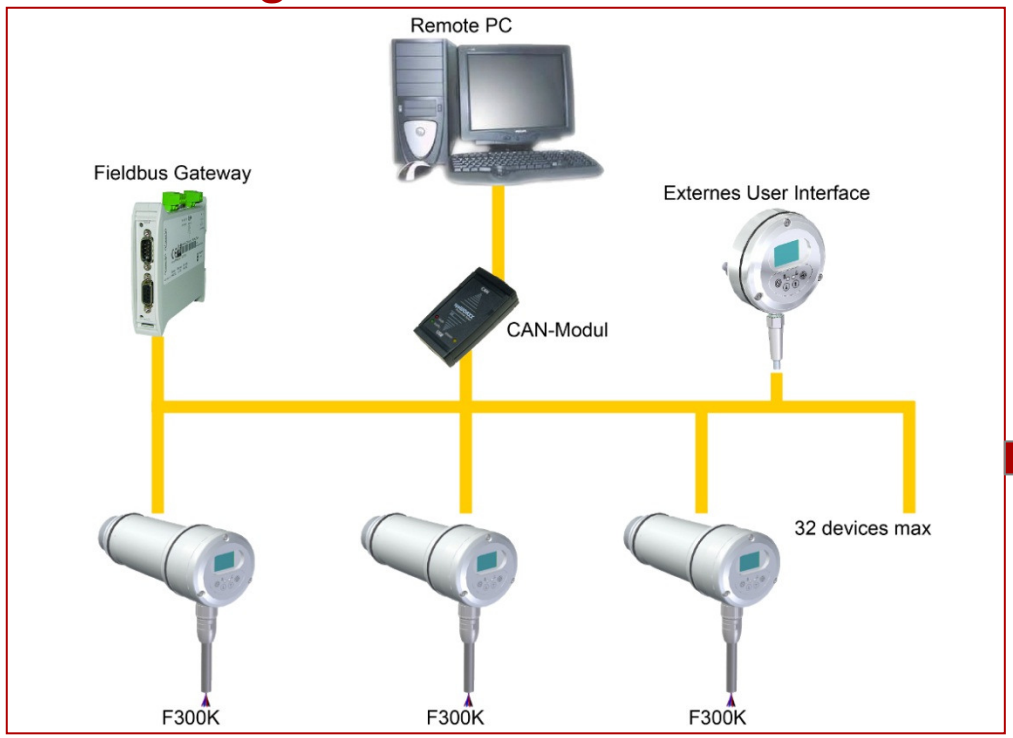


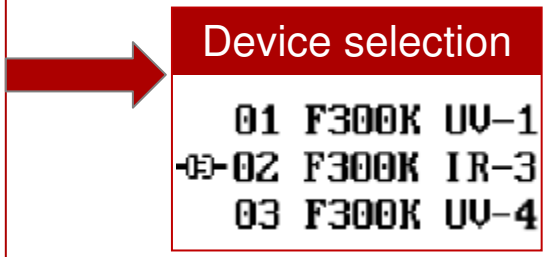
- Device selection with several devices at BUS
- F300K remote operation
- Parameter settings: read, write, store
- Recording and analyses of F300K frequency range
- Configurable pick-up interval of frequency range
- 3D demonstration for analysis
- Selecting of the ideal setting of frequency range

Networking

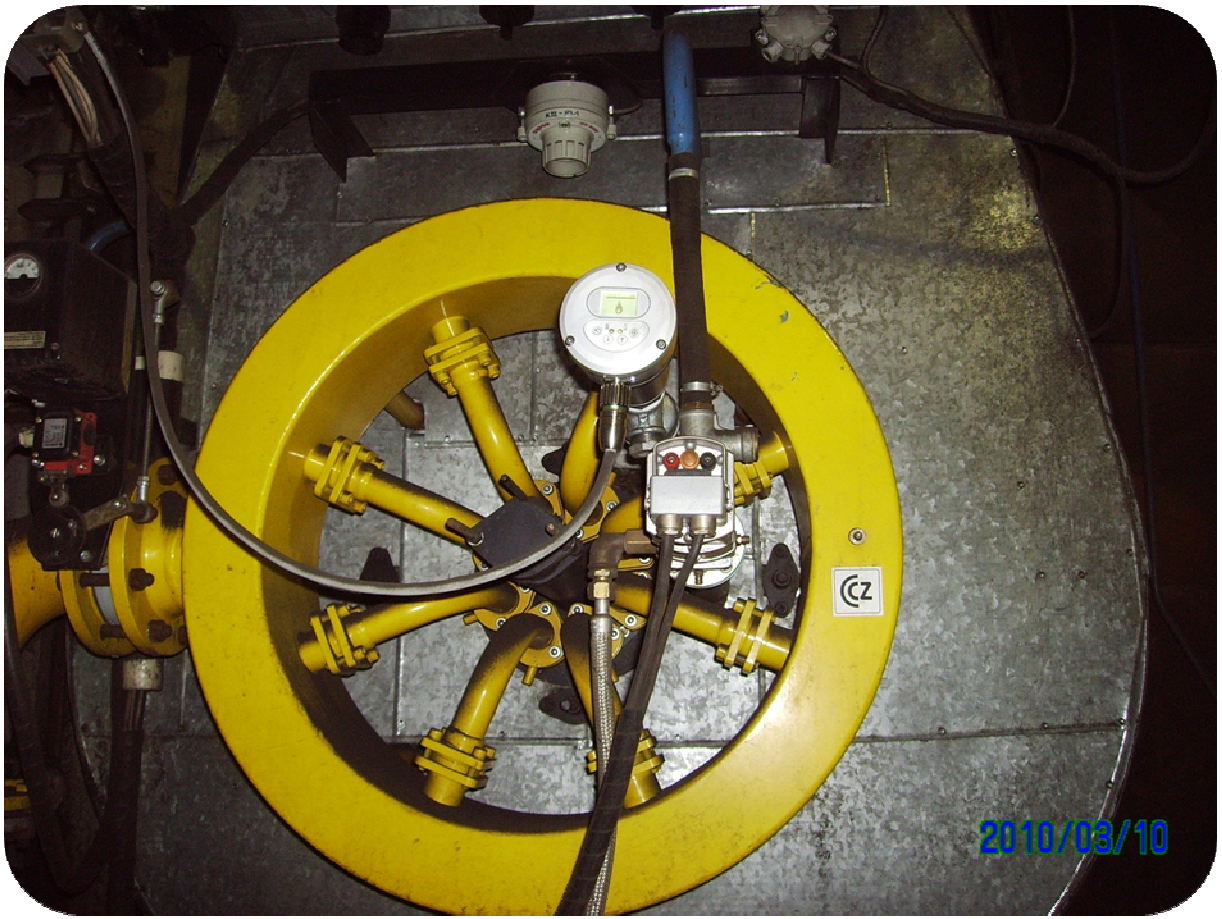
- Operation and commissioning of multiple F300K with or without User Interface via CAN-Bus
- Parameter setting: read, write, store
- Advanced analysis and recording via F300K Remote Software
- Fieldbus Gateway for communication with other Bus-systems

Networking





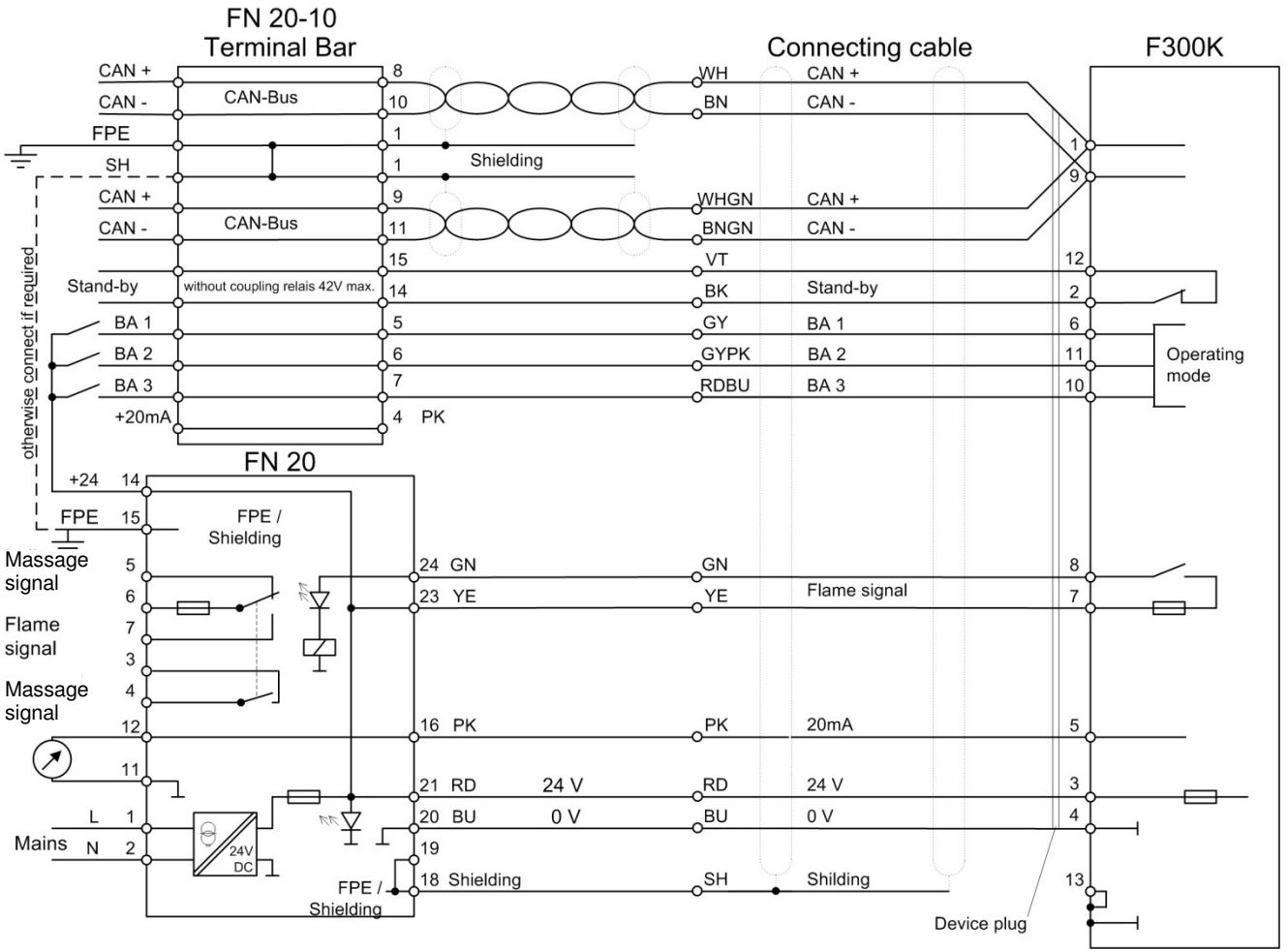
Application example KW Prunerov; Czech Rdepublic



Technical specification F300K

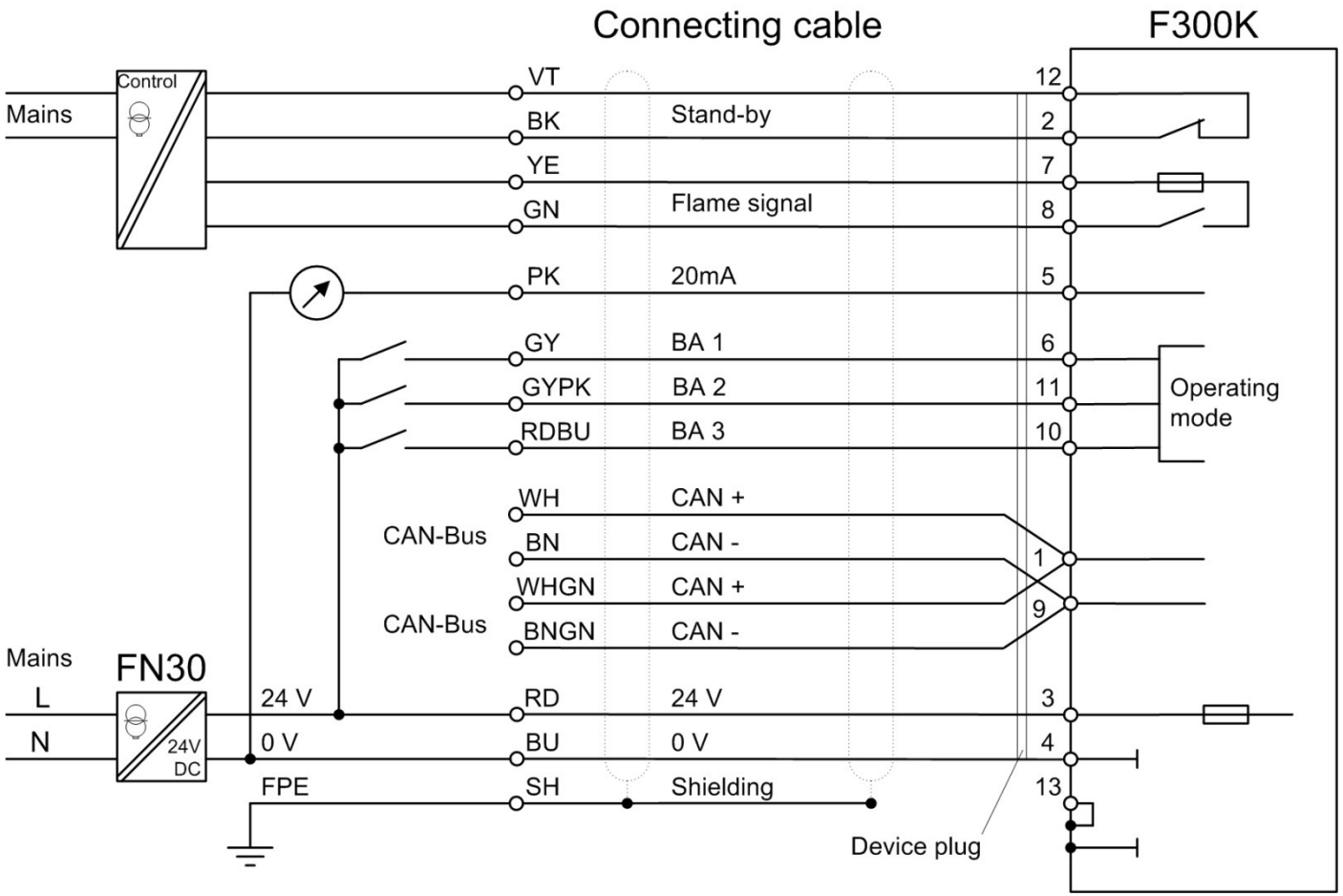
Direct voltage	24 VDC ± 20 %
Power consumption	≤ 3,5 W
Output contact	permissible switching voltage - max. 50 VDC, min. 6 VAC/DC permissible switching voltage - max. 0,5 A, min. 1,0 mA floating
Safety time “operation“	t ≤ 1 s (standard), t ≤ 2, 3, 4, 5 s (factory password required)
Mode of operation	continuous operation
Class of protection	IP67
Operating temperature	- 40 ... + 85 °C (display inside the device)
Weight	1,05 kg

Connection Diagram F300K with power pack FN20



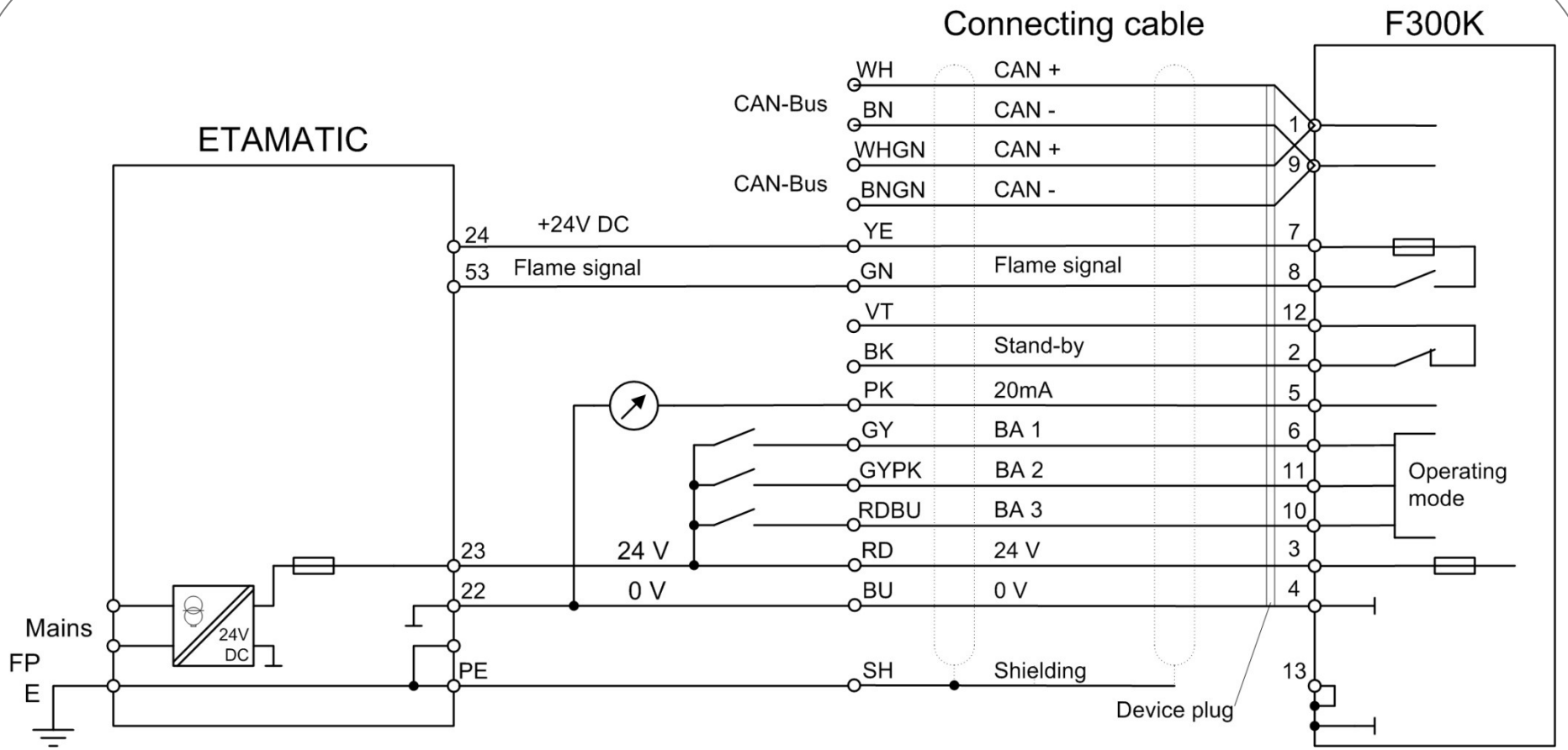
WH	– white	**VT**	– violet	**RDBU**	– red-blue	**RD**	– red
BN	– brown	**BK**	– black	**GN**	– green	**BU**	– blue
WHGN	– white-green	**GY**	– grey	**YE**	– yellow	**SH**	– shield
BNGN	– brown-green	**GYPK**	– grey-pink	**PK**	– pink		

Connection Diagram F300K with power pack FN30



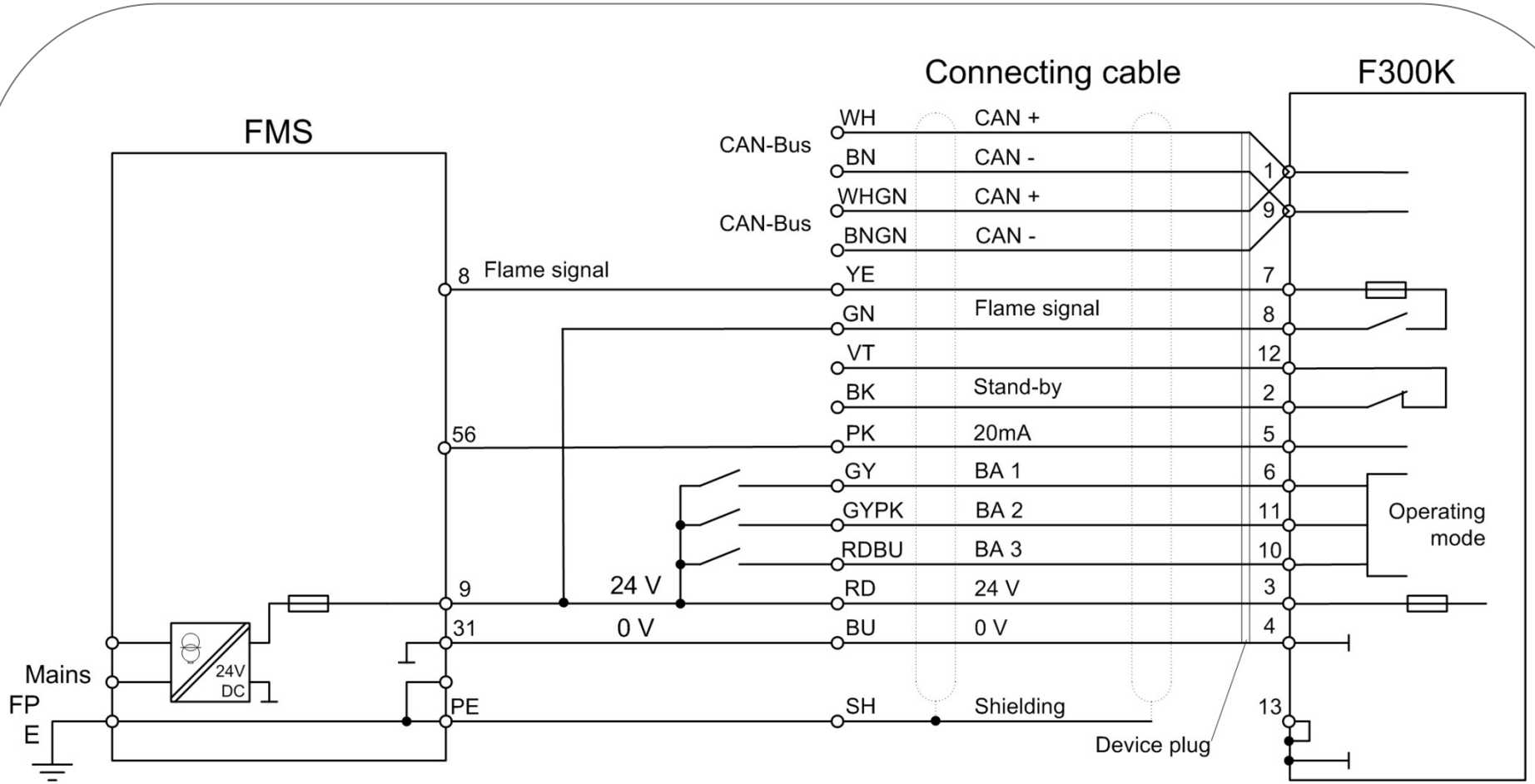
VT	– violet	**PK**	– pink	**WH**	– white	**RD**	– red
BK	– black	**GY**	– grey	**BN**	– brown	**BU**	– blue
YE	– yellow	**GYPK**	– grey-pink	**WHGN**	– white-green	**SH**	– shield
GN	– green	**RDBU**	– red-blue	**BNGN**	– brown-green		

Application example F300K with ETAMATIC



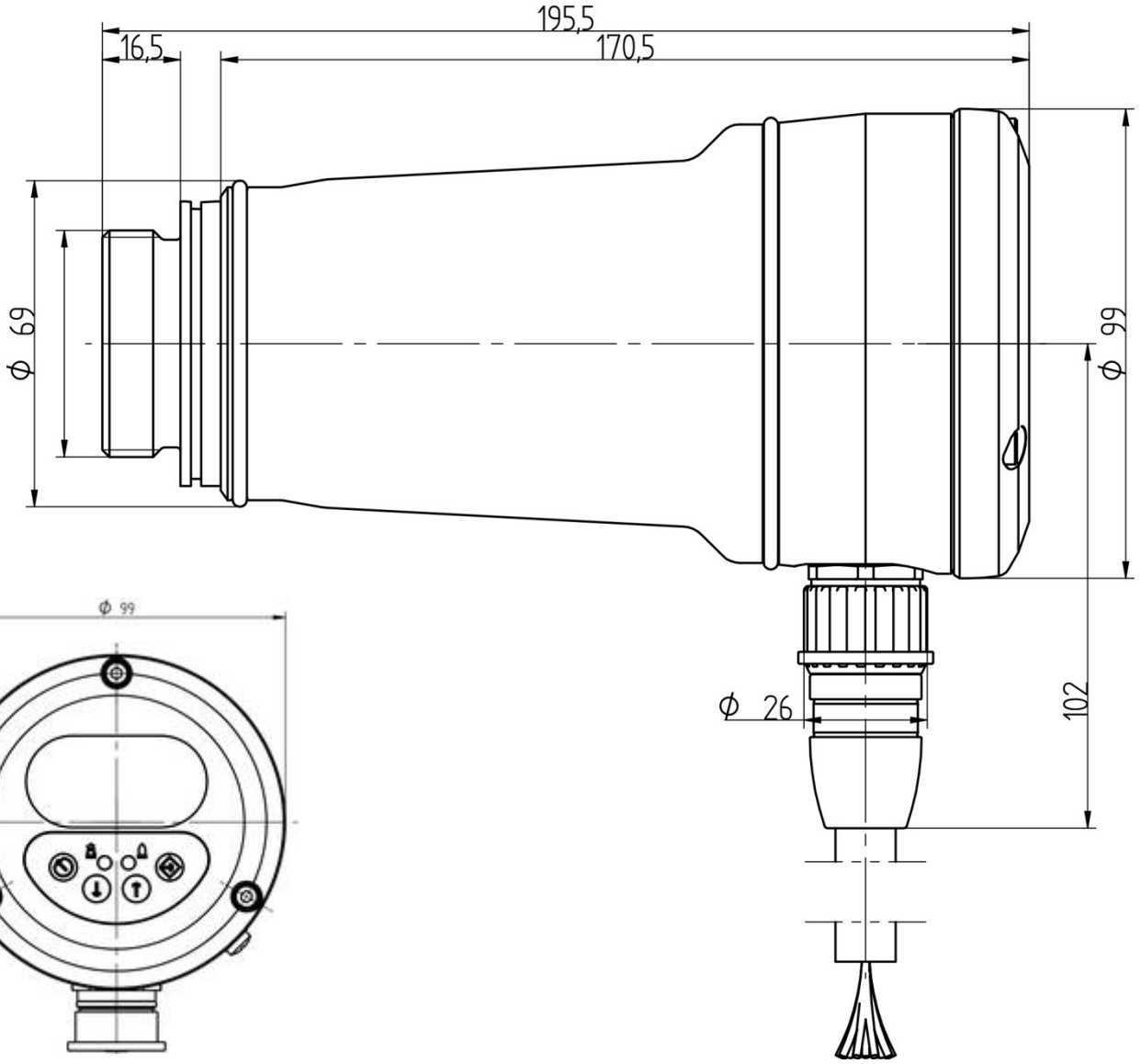
WH	– white	**YE**	– yellow	**PK**	– pink	**RD**	– red
BN	– brown	**GN**	– green	**GY**	– grey	**BU**	– blue
WHGN	– white-green	**VT**	– Violet	**GYPK**	– grey-pink	**SH**	– shield
BNGN	– brown-green	**BK**	– black	**RDBU**	– red-blue		

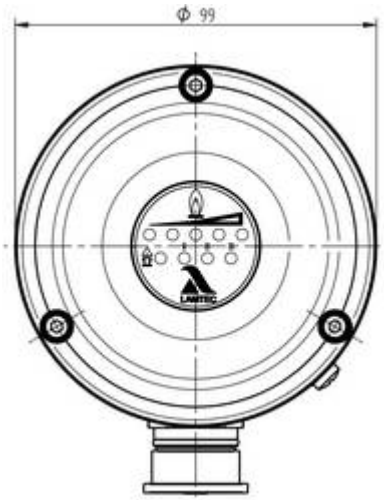
Application example F300K with FMS



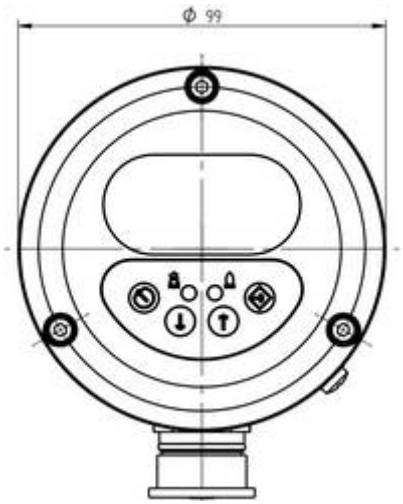
WH	– white	**YE**	– yellow	**PK**	– pink	**RD**	– red
BN	– brown	**GN**	– green	**GY**	– grey	**BU**	– blue
WHGN	– white-green	**VT**	– violet	**GYPK**	– grey-pink	**SH**	– shield
BNGN	– brown-green	**BK**	– black	**RDBU**	– red-blue		

Dimensioned drawing of the F300K



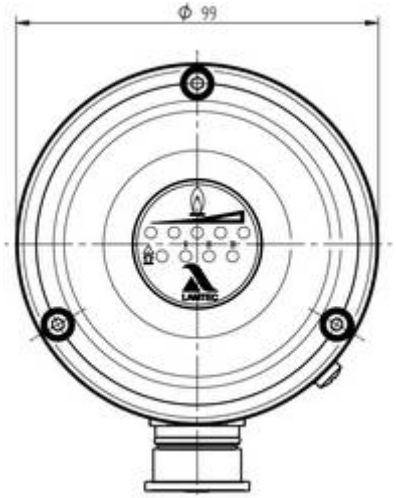


F300K xx-x



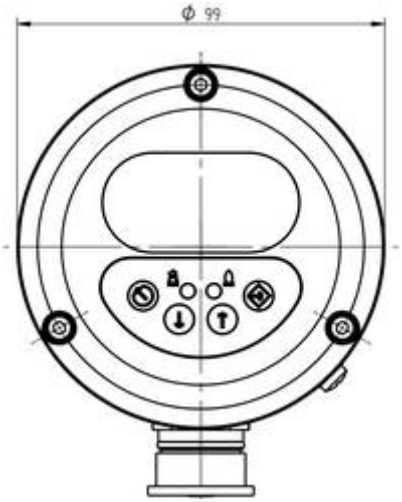
F300K xx-x UI

F300K versions, with and without User Interface



F300K xx-x

Operation via external User Interface or Remote Software



F300K xx-x UI

Additional operation via external User Interface or Remote Software

FLAME DETECTOR F300K Ex-II		II 3 G
T5 -40°C	= Ta = +80°C	Ex nA nC ic IIC T5 (T6) Gc X
(T6 -40°C	= Ta = +70°C)	IBEXU12ATEXB024 X

FB30-00

Portable or for wall mounting

FLAME DETECTOR F300K Ex-II		II 3 G
T5 -40°C	= Ta = +80°C	Ex nA nC ic IIC T5 (T6) Gc X
(T6 -40°C	= Ta = +70°C)	IBEXU12ATEXB024 X

FB30-10

Control cabinet mounting

Selection Criteria F300K

Type of sensor	Spectral radiation range	Range of application - fuel
F300K UV-1	260 ... 400 nm	Oil, gas
F300K UV-4	215 ... 360 nm	Oil, gas (speciality gas such as refinery and blast furnace gas)
F300K IR-2	850 … 1200 nm	Monitoring of combustion chamber and flame-cut edge (coal, wood)
F300K IR-3	1000 ... 1700 nm	• Oil, gas, wood, coal, combustion with high flue gas recirculation • Yellowish waste gases without UV-radiation or protective barriere of UV-proportion by water vapour, dust
F300K IR-4	1000 … 2200 nm	

Areas of applications:

- Single- and dual fuel burner, mixed combustion
- Combustion plants with and without high grade selectivity demands
- Heating plant, power plant, waste incineration plant, process combustion, etc.

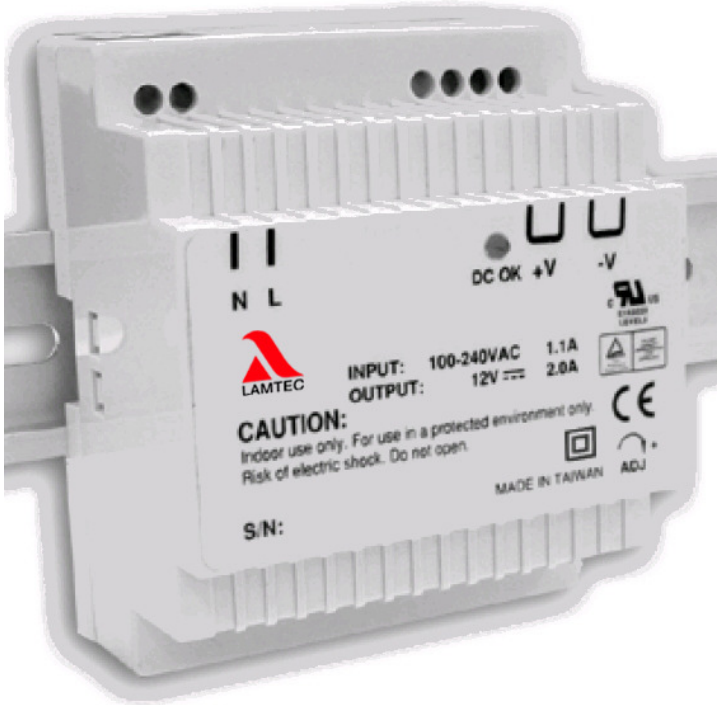
Accessories/Connecting cable

	Material no.
Connection/extension cable, lenth 3 m	659N0500
Connection/extension cable, lenth 5 m	659N0501
Connection/extension cable, lenth 10 m	659N0502
Connection/extension cable, Silicone, length 3 m	659N0510
Connection/extension cable, Silicone, length 5 m	659N0511
Connection/extension cable, Silicone, length 10 m	659N0512

Accessories/Power supply unit

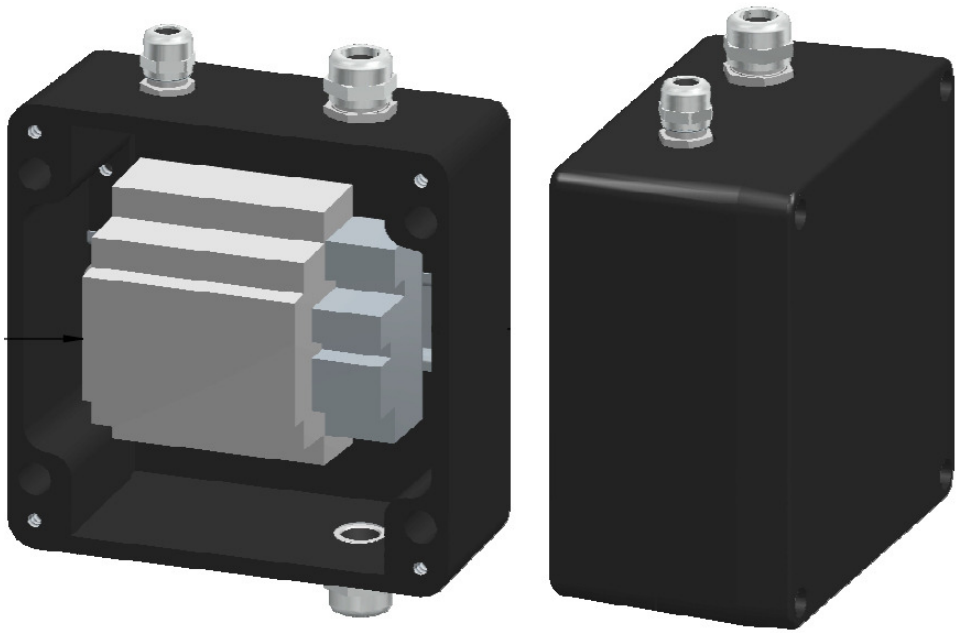
		Material no.
Power supply unit FN20 - IP20 (230 VAC), with relay output		659R6010
Power supply unit FN20 - IP20 (115 VAC), with relay output		659R6010/115
Power supply unit FN20-10 - 230 VAC, with relay output inside housing IP66		659M0101
Power supply unit FN20-10 - 115 VAC, with relay output inside housing IP66		659M0102
Power supply unit FN30 – IP20 (100 … 240 VAC)		659M0400
Power supply unit FN30 – IP66 housing (100 … 240 VAC)		659M0401

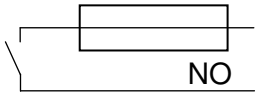
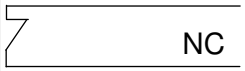
Power supply unit FN30, IP20



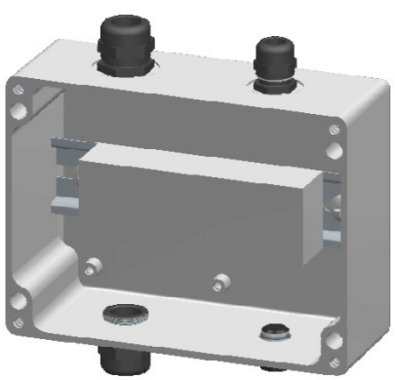
Pin No.	Assignment	Pin No.	Assignment
1	AC/N	5,6	-V
2	AC/L	7	LED
3,4	+V	8	+VADJ.

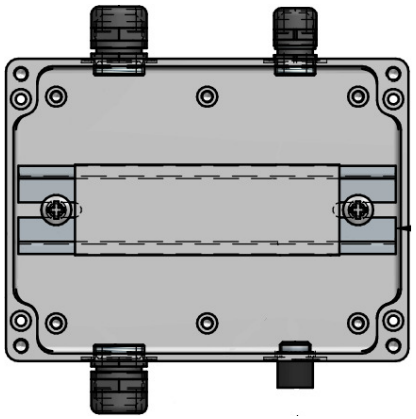
Power supply unit FN30, IP 65



Power supply unit	Function
N	AC-network
L	AC-network
-	-
+V	+24 VDC
+V	
-V	GND
-V	
Terminal assignment	**Function**
-	-
1	shield
4	+20 mA
5	Mode 1
6	Mode 2
7	Mode 3
8	CAN-H bus
9	CAN-L bus
10	 Flame signal
11	
12	 Standby
13	

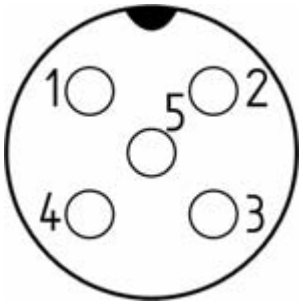
Connecting box FG30-00





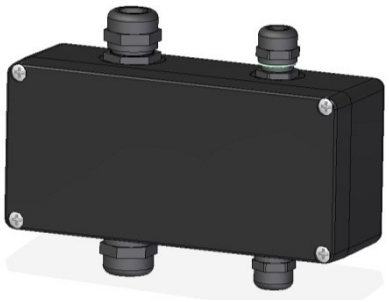
FG30-00
3x cable glands
1x socket for CAN
M12 circular plug

from F300K	Terminal block		Function
WHYE	1		Shield / FPE
RD	2		+24 VDC (CAN-plug Pin 2)
BU	3		GND (CAN-plug Pin 3)
PK	4		+20 mA
GY	5		Mode of operation BA1
GYPK	6		Mode of operation BA2
RDBU	7		Mode of operation BA3
WH	8		Bus CAN-H
WHGN	9		Bus CAN-H (CAN-plug Pin 4)
BN	10		Bus CAN -L
BNGN	11		Bus CAN-L (CAN-plug Pin 5)
GN	12		Flame signal NO ≤ 42 V
YE	13		
BK	14		Standby NC ≤ 42 V
VT	15		

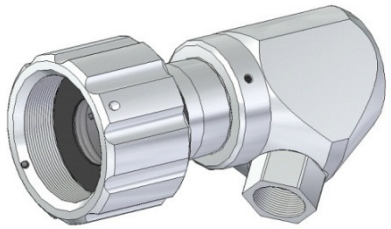
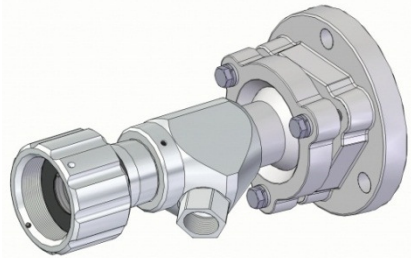


1 Shield
2 + 24 V (green)
3 GND (yellow)
4 CAN-H (white)
5 CAN-L (brown)

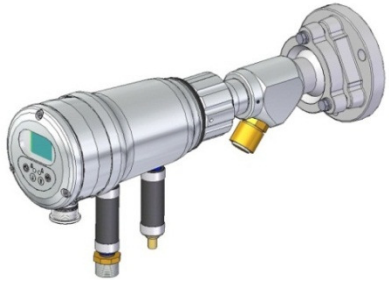
Accessories/Connecting box

		Order no.
Connecting box FG30-00 with plug for CAN-connection		659N5500
Connecting box FG30-20 (ExII) with plug for CAN-connection		659N5502

Accessories/Holdig devices

		Order no.
Screw joint with purge air connection FV30-10 for FFS05 … /V, F200K … /V, F200K … Ex, F300K		659S1200
Screw joint, purge air connection and ball-and-socket joint FV40-10 for FFS05 … /V, F200K … /V, F200K … Ex, F300K		659S1300

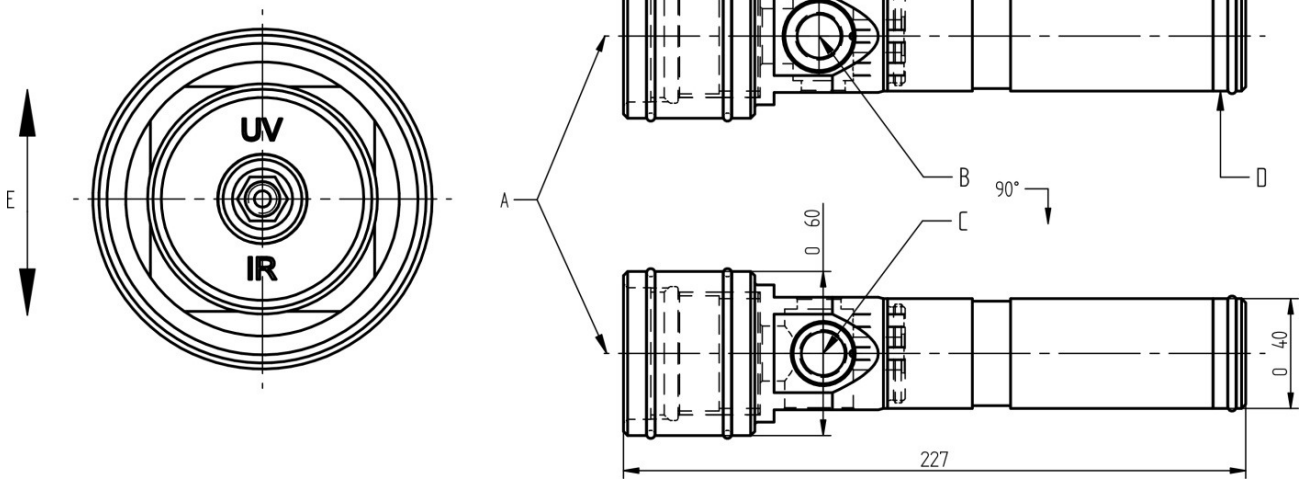
Further Accessories

		Material no.
Cooling air housing FK30		659S1100
Ball-and-socket joint FK41 (Cooling air housing /purge air connection)		659S1401
F300K Remote Software, Windows XP or higher, incl. USB/CAN-modul and connecting cable 2 m		659R9000
Universal test lamp FFP30 (IR/UV)		659M5000

Danger:

Explosion hazard!

The universal test lamp may not be used in a potentially explosive atmosphere.



A - Screw mount for F200K, F300K
Plug mount for FFS05, FFS07, F200K

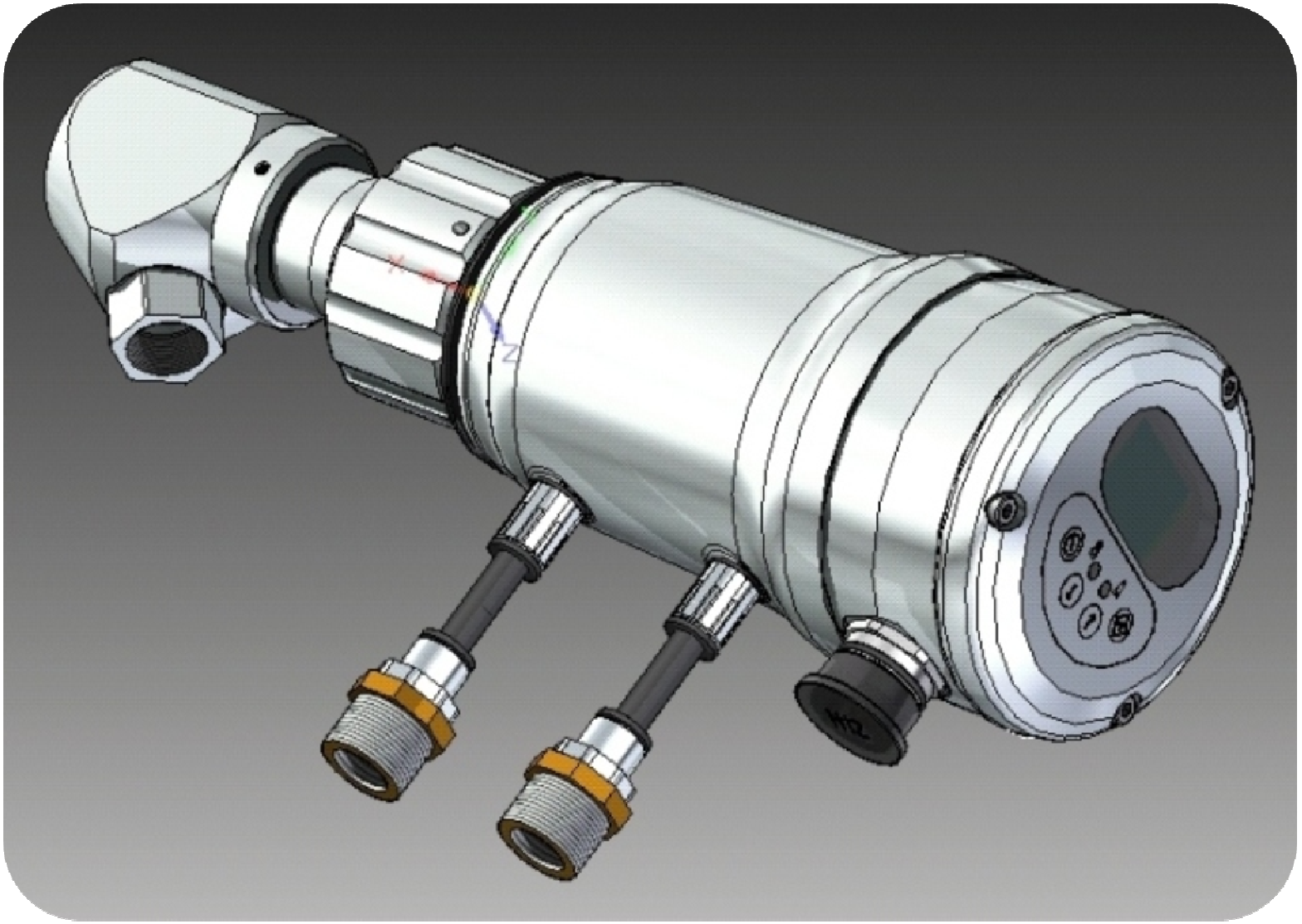
B - Plug mount for FFS06, FFS08, F100K

C - Plug mount for FLS09

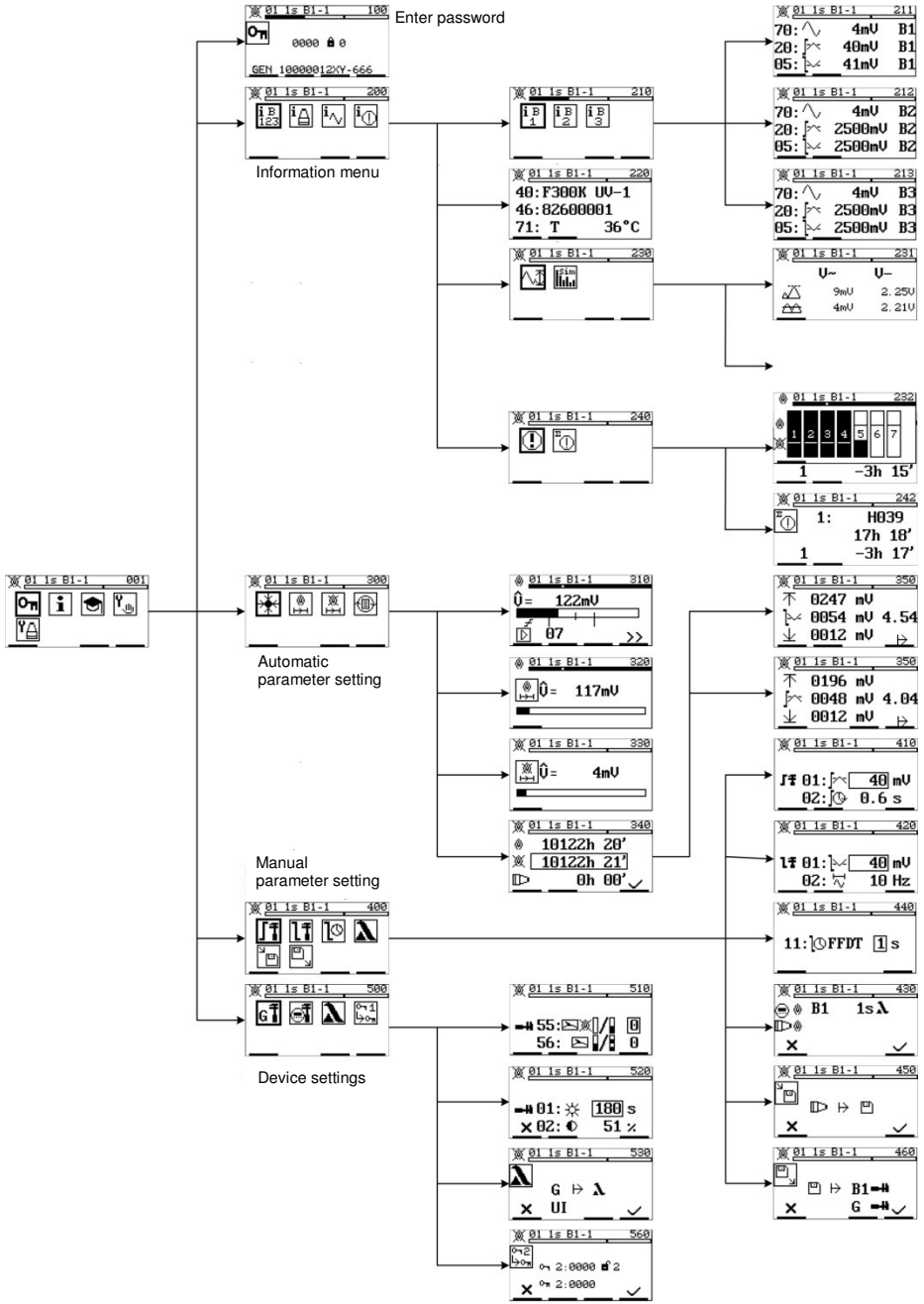
D - Exchange battery (9 V, 500 mA – open through rotation to the left

E - Dip-switch

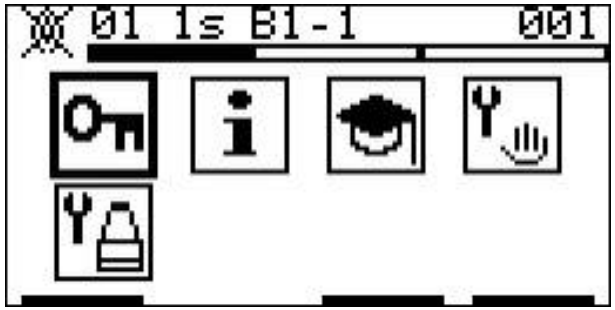
F300K with bracket and cooling air housing

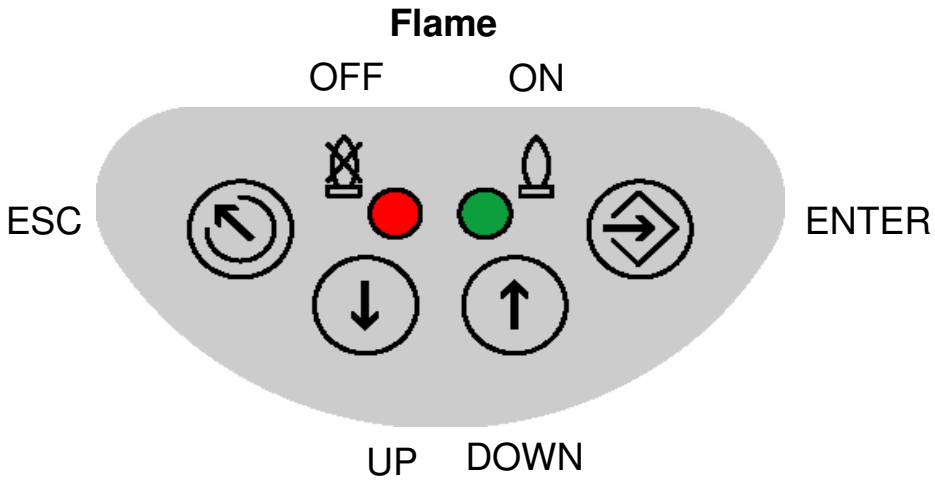


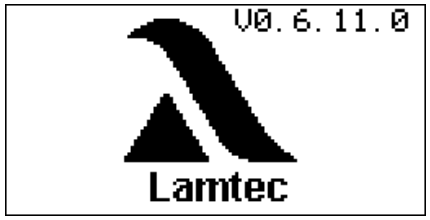
Menu structure

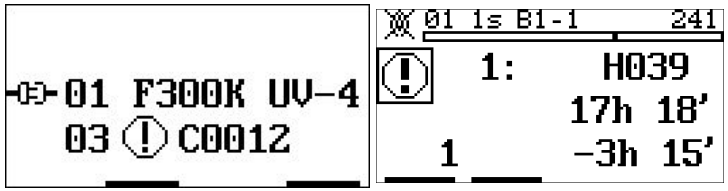


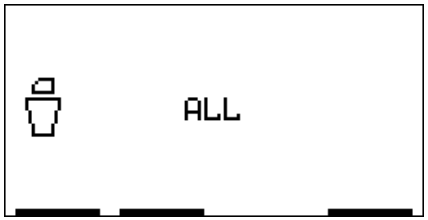
active keys →

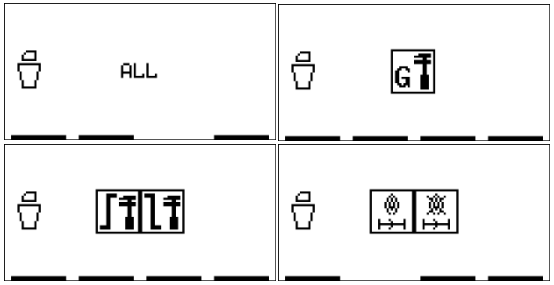


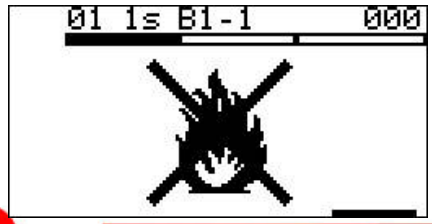












Start screen 1
–Software version of terminal software
–Manufacturer

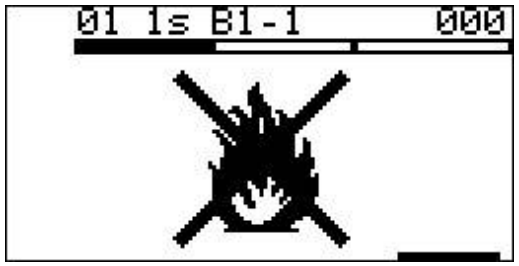
Start screen 2
–Selection, is only available if several devices are installed at the Bus
- from left to right

–Selection symbol
–Bus ID
–Model (! C0012 – unknown device)

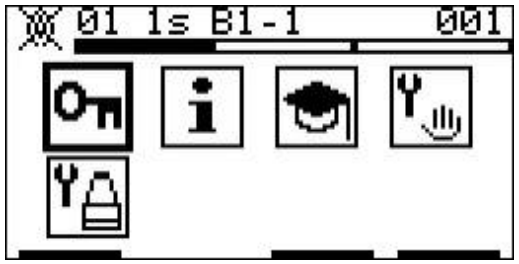
Start screen 3
Note! Image appears only when using an external User Interface or if you are exchanging the User Interface and also by using the F300K-Remote-Software.
–Selection of the files you want to delete (scroll)

You can delete:
–all files
–stored device parameters
–stored opertion parameters
–stored learning data

Main window
–Symbol depending on flame status OFF or ON



Main window
–Symbol depending on flame status OFF or ON



Status line

	Flame detection
01	Bus ID, 01 ... 32
1s	1s safty time 1 ... 5 s
B1	Mode 1, 2, 3
-1	Frequency band 1 ... 7
leer	Hxxx, Uxxx / error code in failure condtions
001	Current picture number

← Enter password

← Information menu

← Automatic parameterisation, adjust, learning function

← Manual parameterisation

← Device adjustment, flame scanner, operation level

Enter Password

PW level 0

–Customer level, read information only

←Code variable, passwort generation by LAMTEC

PW level 1 - 0000 delivery status

–Standard level with limited manual (hand) parameterisation

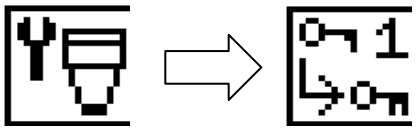
PW level 2 - XXXX customer password

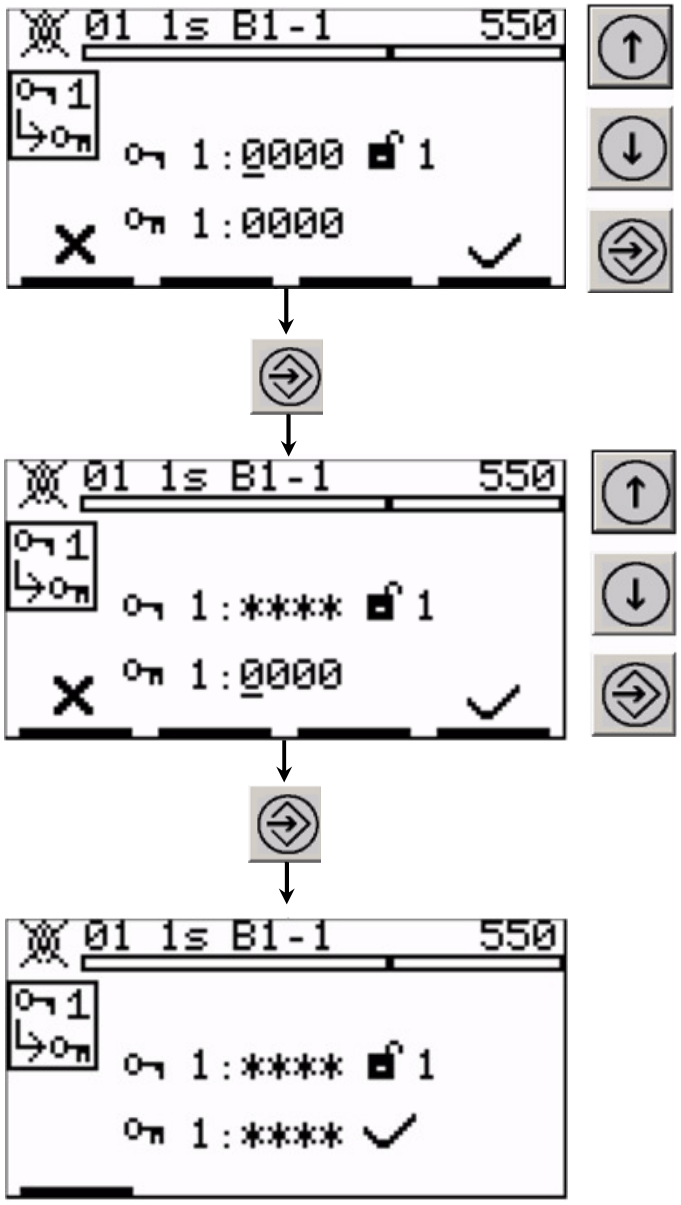
–Expert level with comprehensive manual (hand) parameterisation

PW level 4 – factory

–Plant level with complete manual (hand) parameterisation

Change the Password in level 1



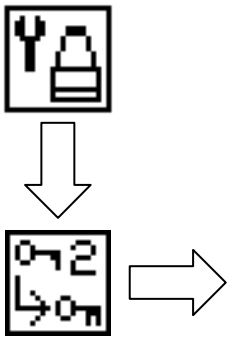


Enter the old password of level 1.
Delivery status = 0000

The old password for level 1 has been entered successful.
Enter the new password for level 1.

New password for level 1 is accepted

Change the password in level 2



Enter the old password of level 2.
Delivery status = XXXX

The old password for level 2 has been entered successful.
Enter the new password for level 2.

New password for level 2 has been assumed.

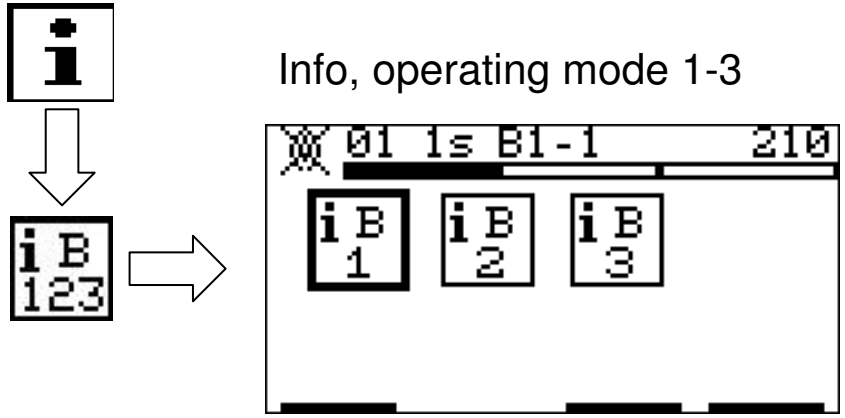
← Information, operating mode 1 – 3

← Information, device settings

← Information, flame signal

← Information, error

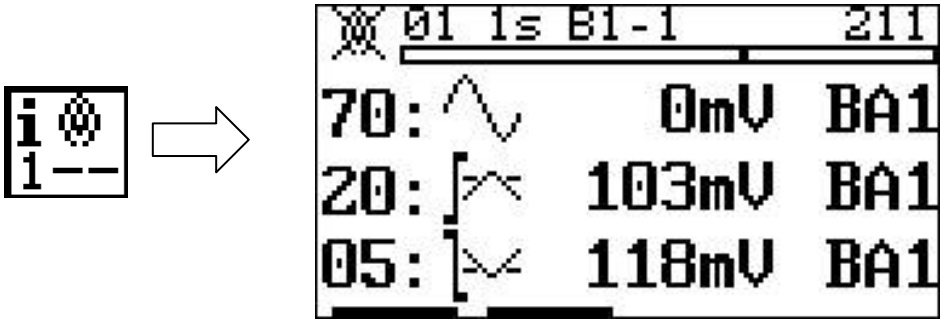
Info, operating mode 1-3



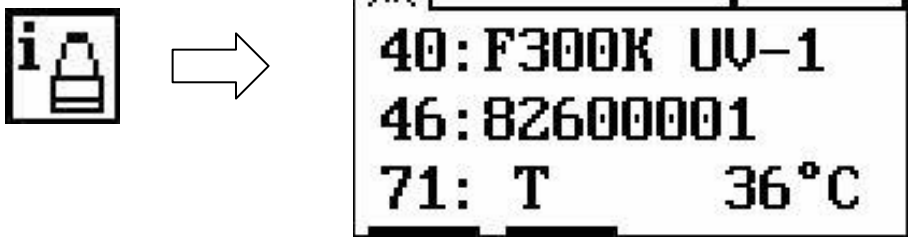
← Information, operating mode 1

← Information, operating mode 2

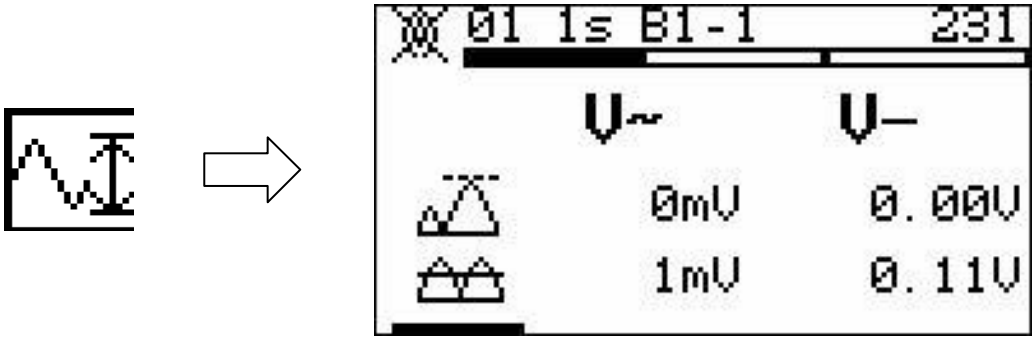
← Information, operating mode 3



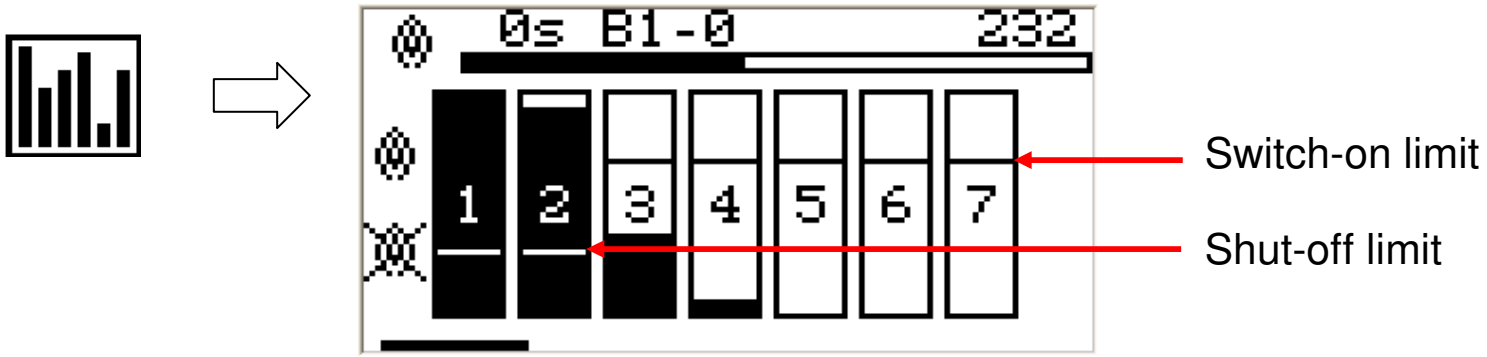
70:		AC Signal	0 … 2500 mV	Current effective value of the amplified signal
20:		Switch-on level	0 … 2500 mV	Switching threshold for switching to “Flame ON"
05:		Switch-off level	0 … 2500 mV	Switching threshold for switching to “Flame OFF"
07:		Amplification	1 … 13	Amplification level of the signal
06:		Lower frequency		Frequency range 10 … 160 Hz 5 … 80 Hz
11:		Safety time	1 … 5 s	FFDT, maximum time before the flame relays are switched off after the disappearing of the flame signal
10:		Switch-off time	0,3 … s	Time before the flame relays are switched off after missing the flame signal
09:		Recovery time (integration time)	0,2 … 5 s	Time for the development of the full switch-off time of the flame relays if the flame signal is not emitted for a short period
24:		Switch-on time	0,2 … 4,9 s	Switch-on time of the flame relays after appearance of a very high-quality flame signal – effective only in the switch-on/ startup operation
25:		Level of suppression	0,3 ... 5,0 s	Level of suppression of portions of the signal that do not belong to the signal of the intended flame - effective only in the switch-on/ startup operation



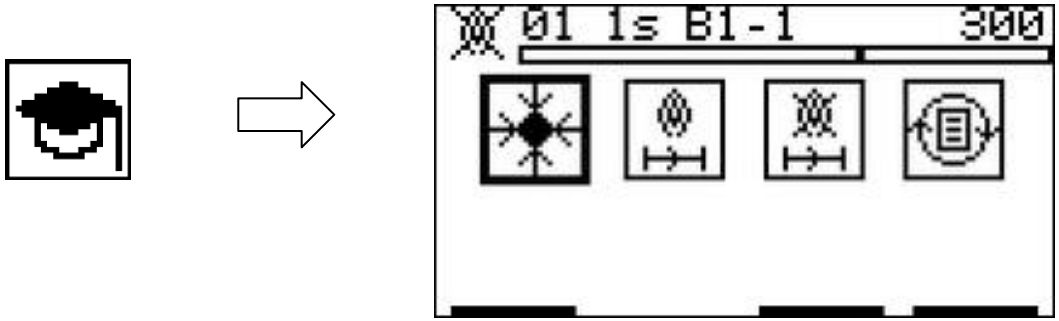
40:		Device type		Example: F300K UV-1
46:		Serial number		Consecutive number
71:	T	Current device temperature	°C	Temperature inside flame sensor
72:	Tmax	Max. device temperature	°C ▲	Highest temperature measured in the device
73:	Tmin	Min. device temperature	°C ▼	Lowest temperature measured in the device
74:		Operating hours without minutes	h	6 digits (e.g. 120003 h)
75:		Switching cycles	SC	Number of switching cycles (e.g. 100234)
76:		Software version of flame scanner		Example: SW-00-01-03-000
77:		CRC programme of flame scanner		Safety-related CRC
15:		B1, B2 or B3 CRC switch-off parameters, mode 1, 2 or 3		Safety-related CRC
30:		B1, B2 or B3 CRC switch-on parameters, mode 1, 2 or 3		Non safety-related CRC
69:	G	CRC device parameter		Device parameter does not influence the safety relevant functions
53:	W	CRC factory parameter		Factory parameters can only be changed by the manufacturer
49:		Hardware version, flame detector		Example: HW-152-152-150
78:		Software version, internal operating unit		Example: SW-00-05-01-000
79:	T UI	Device temperature of the operating unit	°C	

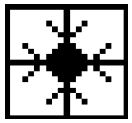


←	Actual peak value of the signal	0 … 2500 mV
←	Effective value of the signal	0 … 2500 mV

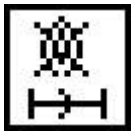


F300K software version	1.1	
Mode and frequency band	BxSy	BxTy
Frequency range y	Lower limit frequency [Hz]	
1	10	5
2	16	8
3	25	13
4	40	20
5	63	32
6	100	50
7	160	80

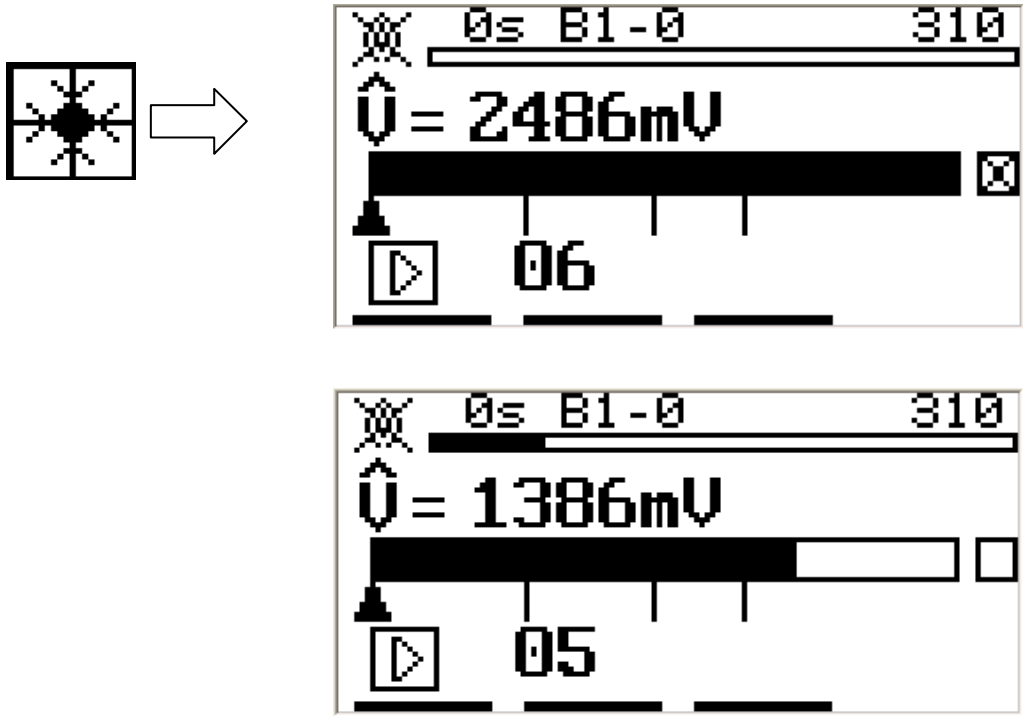


 → Adjustment

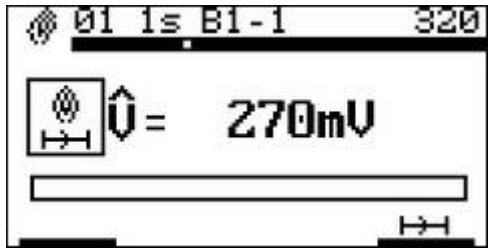
 → Learning flame ON, 30 s

 → Learning flame OFF, 30 s

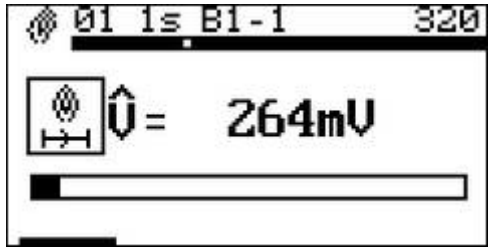
 → Evaluation



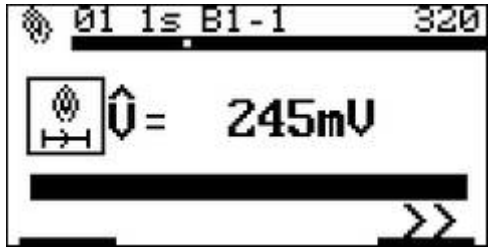
← New modified amplification



← Flame data „Flame ON“ start learning

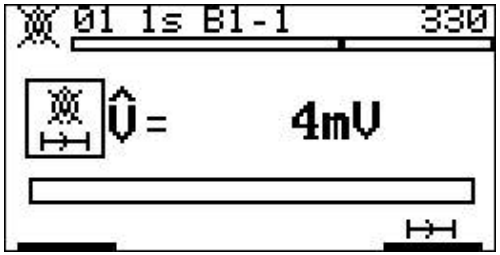


← Flame data „Flame ON“ start learning, approx. 30 s

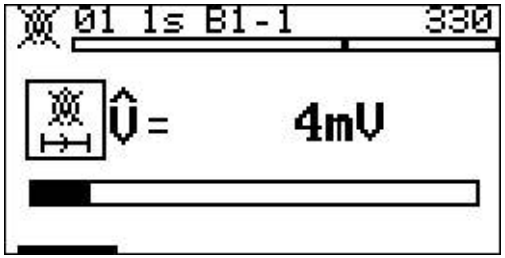


← Finish, than continue with next step,
learning „Flame OFF“
or
leaving with ESC and select the next step manually

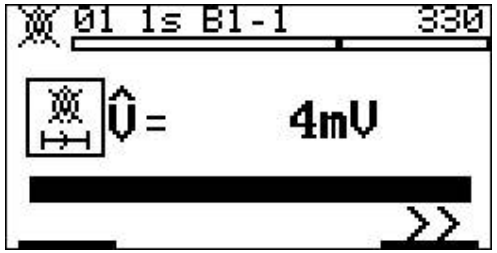
Recording Flame OFF



← Flame data „Flame OFF“ start learning



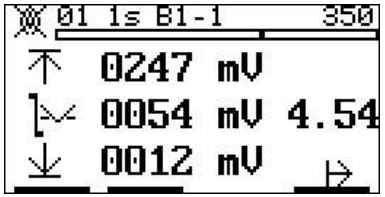
← Flame data „Flame OFF“ start learning, approx. 30 s



← Finish, than continue with next step „evaluation“
or
leaving with ESC and select the next step manually

← Flame ON data, learned/recorded

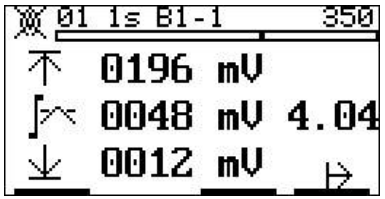
← Flame OFF data, learned/recorded



← Upper limit

← Switch-off level, process reliability

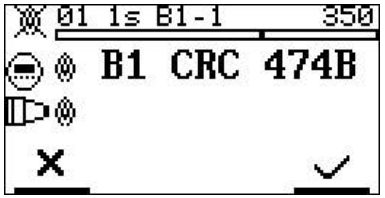
← Lower limit



← Upper limit

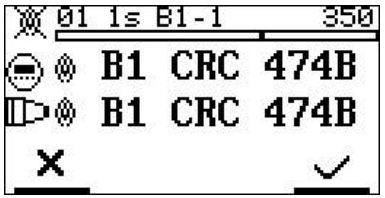
← Switch-on level, process reliability

← Lower limit



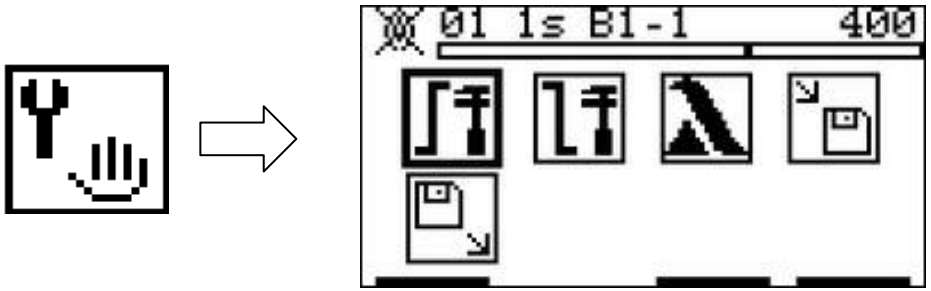
← Data which should be send from User Interface (mode 1, CRC of the data set)

- Send with ENTER
- Reject with ESC



← Data (line 1) send from User Interface
Data (line 2) received from flame detector (blinking), compare the CRC through the user

- Confirm the data with ENTER
- Reject the data with ESC



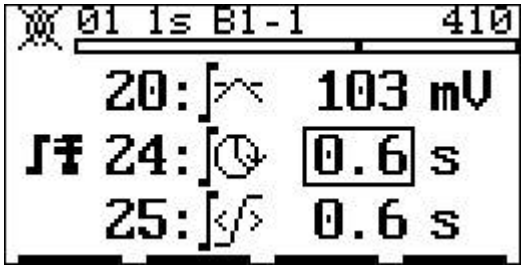
 ← Switch-on/-off parameter

 ← Switch-off parameter

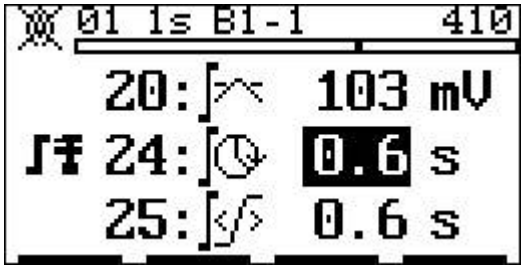
 ← Reset, factory settings

 ← Save parameter

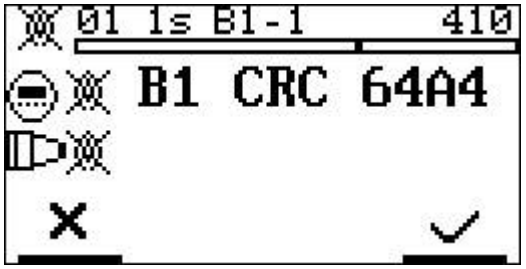
 ← Parameter setup



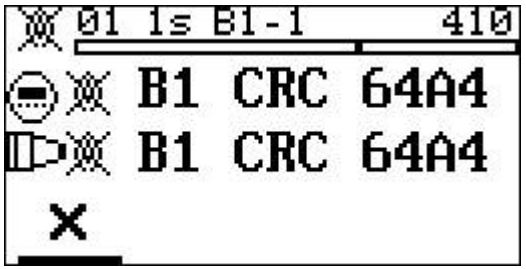
– Select parameter with UP/DOWN and confirm with ENTER



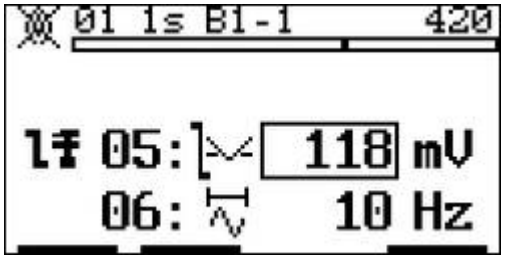
– Modify parameter with UP/DOWN and confirm with ENTER



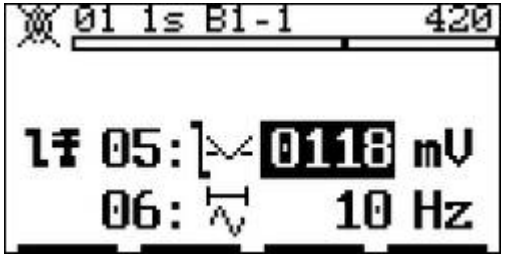
– Send the data from the User Interface (mode 1, CRC of the data set)
– Send with ENTER
– Reject with ESC



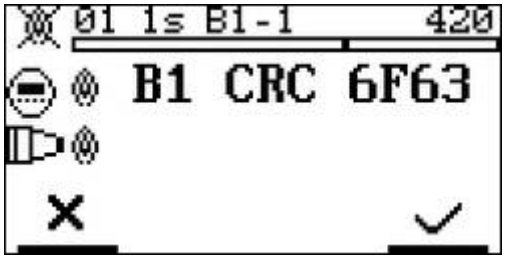
– Data (line 1) send from the User Interface
– Data (line 2) received from the flame detector
– transmission was successful
– leaving menu with ESC



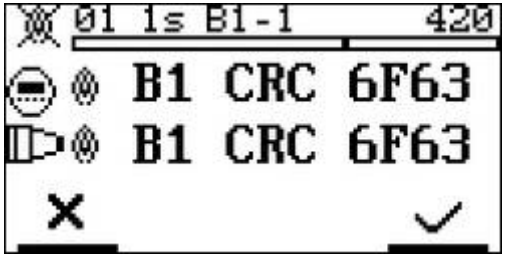
- Select parameter with UP/DOWN and confirm with ENTER or
- Leave the menu with ESC



- Modify parameter with UP/DOWN and confirm with ENTER or Reject with ESC

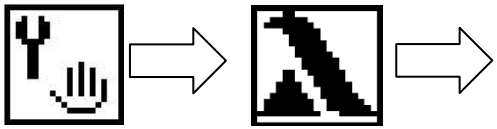


- Send the data from the User Interface (mode 1, CRC of the data set)
- Send with ENTER
- Reject with ESC

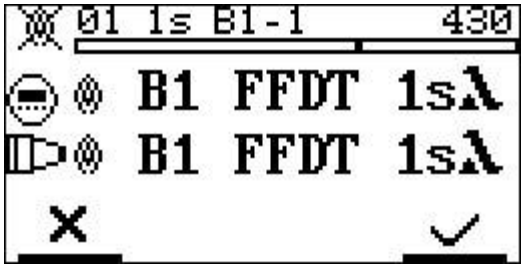


- Data (line 1) send from the User Interface
- Data (line 2) received from the flame detector
- Transmission was successful
- Leaving menu with ESC

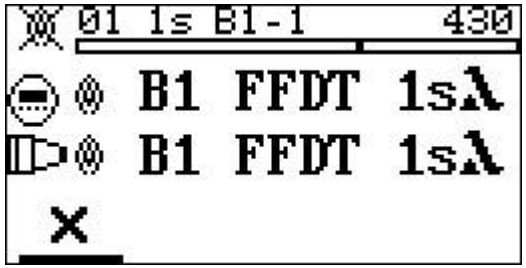
Restore the Factory settings



- Send the factory parameter for active operating mode and safty-time FFDT 1 s from operating level
- send with ENTER
- cancel with ESC



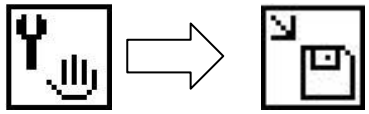
- Data (line 1) send from User Interface
- Data (line 2) received by the flame detector (blinking)
- Compare the Data
- Confirm with ENTER within 8 s
- Reject with ESC

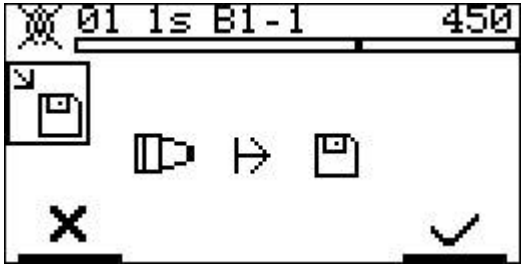


- Transmission successful
- Leave menu with ESC

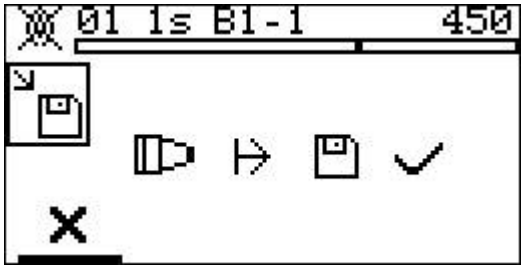
Save the parameter

The device parameters which currently exist in the flame scanner and all of the operating mode parameters are copied to the User Interface.



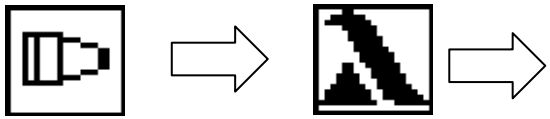


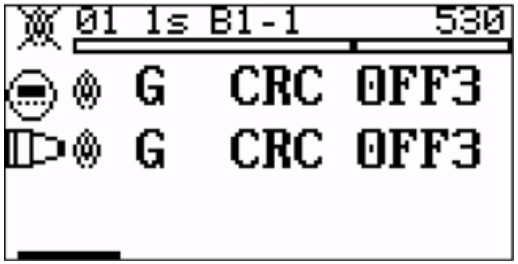
- Save data or
- Reject with ESC



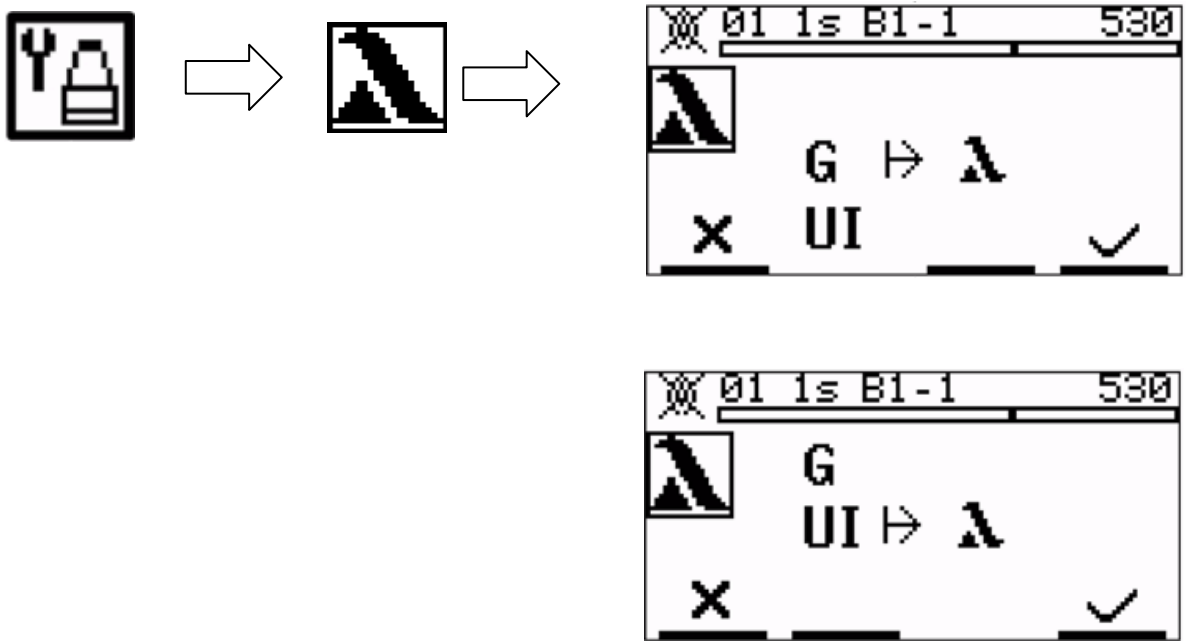
- The data has been successfully saved, leave with ESC

Resetting the Flame Scanner factory settings





Resetting the User Interface factory settings



Check the switch-off (Extract from operation instructions of F300K)

Notice:

Checking the safety-related parameters by means of a switch-off test

You have to check the security-related parameters of the F300K to ascertain whether they are set in accordance to the requirements for the combustion to be monitored and to ensure compliance with the relevant standards.

›Check the parameters for observance to the flame failure detection time (FFDT) by means of a switch-off test in the relevant performance range and the relevant modes of the furnace.

›Check before that the parameter for the flame failure detection time (FFDT) is set correctly on the display of the F300K.

›Simulate the flame extinguish or flame go out. To do this, you have to shut off the fuel supply of the burner monitored by the F300K (preferably using the quick-closing valve). Check after disappearing of the flame, that the signal for closing the safety shut-off device is triggered.

Obligation to provide evidence (Extract from operation instructions of F300K)

Notice:

Due to the obligation to provide documentary evidence to testing authorities, for quality management systems or to clarify liability issues and so on, we urgently recommend that you document your checks of the parameter settings.
This documentary evidence can be included in the burner's settings log.

It must be possible for outsiders to verify the checked safety-related parameter settings. This can be done by reading out the parameters and/or the CRC of the safety-related parameter sets of modes 1, 2 and 3 for the "flame ON" state by means of the user interface.

We recommend to use the LSB-remote-software to save or make a note of the software version number at the time of the check and the individual parameters as a data set.

- The device F300K is designed to have a life time of 10 years or 250,000 cycles. The functional safety calculations are based on these values.
- The actual life time of the F300K depends on the ambient temperature among other factors. In particular, operation at high temperatures reduces the actual service life.

TÜV SÜD Industrie Service

Choose certainty. Add value.

CONFIRMATION

on the examination of an independent flame detector device according to DIN EN 298, DIN EN 230 and DIN EN 61508

Date: 2012-04-30

Our reference: IS-TAF-MUC3u

Order no. 1720554

Document: CF1469012_BST_SIL.doc

Page 1

Test Laboratory	TÜV SÜD Industrie Service GmbH Abteilung Feuerungs- und Wärmetechnik Prüfbereich Sicherheits-, Kontroll- und Regeleinrichtungen	
Subject of Test	Type	**F300K**
	Models	F300K-...-... F300K-...-... UI
Ordering Company	LAMTEC Leipzig GmbH & Co. KG D-04425 Taucha	
Product description	Flame detector device	
Basis of Test	DIN EN 61508:2011-02 parts 1-7, DIN EN 298:2004-01 +Berichtigung 1:2006-09, draft DIN EN 298:2010-05, DIN EN 230:2005-10	
Test Report	no. C-F 1469-00/12 dated 2012-04-30	

The document consists of 2 pages

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The test results refer exclusively to the units under test.

The results in detail, the evaluation of the results and the conclusions out of the results are described in the above mentioned test report. Excerpts from this test report and from the test documentation are printed on the reverse.

Feuerungs- und Wärmetechnik

Johannes Steiglechner

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Trade Register: Munich HRB 96 869
VAT ID No. DE 129484218
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Feuerungs- und Wärmetechnik
Ridlerstraße 65
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Germany

CE type examination

ZERTIFIKAT ◆ CERTIFICATE ◆ 型式証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Mitglied von

TÜV SÜD

Industrie Service

ZERTIFIKAT
Certificate

EG-Baumusterprüfung (Modul B) nach Richtlinie 97/23/EG
EC Type-examination (Module B) according to Directive 97/23/EC

Zertifikat-Nr.: Z-IS-TAF-MUC-12-04-714480-005
Certificate No.:

Name und Anschrift des Herstellers: *Name and Postal Address of Manufacturer:*	**Lamtec Leipzig GmbH & Co KG** **Portitzer Straße 69a** **D-04425 Taucha**

Hiermit wird bescheinigt, daß das unten genannte EG-Baumuster die Anforderungen der Richtlinie 97/23/EG erfüllt.
We herewith certify that the type mentioned below meets the requirements of the Directive 97/23/EC

Produktart *product category*	**Flammenwächter für Dauerbetrieb als Ausrüstungsteil mit Sicherheitsfunktion**
Typ, Ausführung *type, model*	**F300K** **Ausführungen siehe Seite 2**
Prüfgrundlage *basis of examination*	**Grundlegende Sicherheitsanforderungen gem. Anhang I DIN EN 298:2004-01; Entwurf DIN EN 298:2010-05, DIN EN 230:2005-10, DIN EN 61508:2011 Teile 1-7 DIN EN 60156-1:2005-03, 10.5**
Prüfbericht Nr. *test report no.*	**C-F 1469-00/12 vom 2012-04-30**
Fertigungsstätte *manufacturing plant*	**Lamtec Leipzig GmbH & Co KG** **Portitzer Straße 69a** **D-04425 Taucha**
Gültig bis: *valid until*	**2022-04-29**

(Ort, Datum)

München, 2012-04-30

TÜV SÜD Industrie Service GmbH
Zertifizierungsstelle
für Druckgeräte

Benannte Stelle, Kennnummer 0036
Notified Body, No. 0036

Bitte beachten Sie die umseitigen Hinweise.
Please note the remarks on the second page.

Mitglied der
CONFEDERATION EUROPÉENNE
CEOC
D'ORGANISMES DE CONTRÔLE

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TÜV

CE 0085

DVGW
CERT GMBH

EG-Baumusterprüfbescheinigung

EC type examination certificate

CE-0085CN0092
Produkt-Identnummer
product identification no.

Anwendungsbereich *field of application*	EG-Gasgeräterichtlinie (2009/142/EG) *EC Gas Appliances Directive (2009/142/EC)*
Zertifikatinhaber *owner of certificate*	LAMTEC Leipzig GmbH & Co. KG Portitzer Straße 69a, D-04425 Taucha
Vertreiber *distributor*	LAMTEC Leipzig GmbH & Co. KG Portitzer Straße 69a, D-04425 Taucha
Produktart *product category*	Ausrüstungsteile für Gas- und Druckgeräte: Flammenwächter (4131)
Produktbezeichnung *product description*	Kompaktflammenwächter, wahlweise mit integriertem IR- oder UV-Flammenfühler
Modell *model*	F300K...
Bestimmungsländer *countries of destination*	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK
Prüfberichte *test reports*	Baumusterprüfung: C-F 1469-00/12 vom 30.04.2012 (TSG)
Prüfgrundlagen *test basis*	EU2009/142/EG (30.11.2009) DIN EN 298 (01.01.2004)
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Thank you for your attention

Questions?

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