



Product Catalogue

Measuring systems and accessories

Sensors and Systems for Combustion Engineering



www.lamtec.de

Contents

■ Latest generation of sensors and measuring systems.	3
■ Presenting the LAMTEC sensors and measuring systems	3
■ Measuring system selection criteria.	4
■ Selection criteria	4
■ LS2 ECO Lambda Probe.	6
■ KS1D ECO Combination Probe.	8
■ LS2-BF Lambda Probe.	10
■ KS1D-BF Combination Probe.	13
■ LS2-KAF Lambda Probe.	16
■ KS1D-KAF Combination Probe.	19
■ LS2 Ex Lambda Probe.	22
■ KS1D-Ex Combination Probe.	25
■ KS2DNO _x Combination Probe.	28
■ GED ECO.	30
■ GED BASE.	32
■ GED FLEX.	35
■ GED FLEX.	35-43
■ Fully automatic calibration system for LS2-/KS1D-BF, -EX, KAF and KS2DNO _x probe with LT2 or NT1.	44
■ LT2 Lambda Transmitter.	49
■ EExd housing for LT2 Lambda Transmitter.	53
■ LT3 Lambda Transmitter.	55
■ LT3-F Lambda Transmitter.	59
■ NT1 NO _x Transmitter.	62
■ Mass flow measurement grid for volumetric flow measurement.	64
■ Introducing LAMTEC mass flow measurement grid for volumetric flow measurement	64
■ Notes.	70

Latest generation of sensors and measuring systems.

Presenting the LAMTEC sensors and measuring systems

Intelligent LAMTEC sensors and measuring systems ensure the correct measurement for optimum combustion. Our measuring systems can be used for measuring exhaust gas from virtually all fuels:

- Natural gas, heating oil (extra-light), heating oil (heavy), hydrogen
- Particle-laden fuel exhaust gases, biomass
- Coke oven gases, furnace gases
- Coal, special fuels

Advantages:

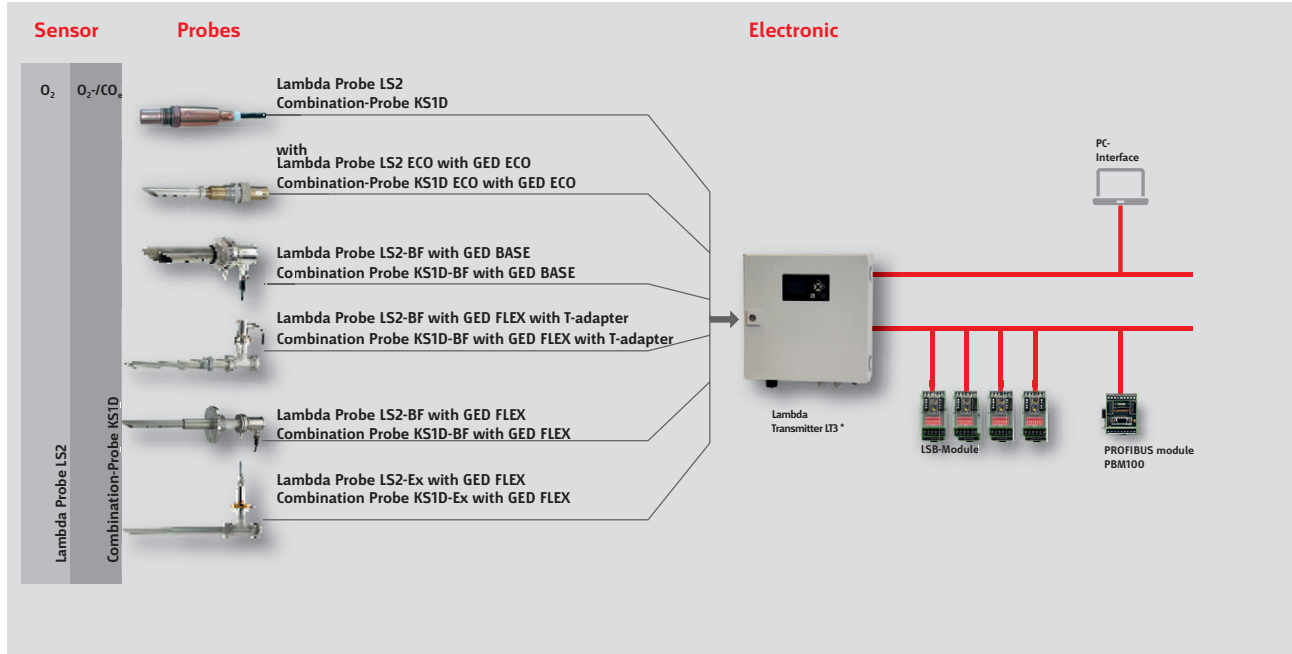
- No measuring-gas extraction
- No gas preparation
- Suitable for particle-laden fuel exhaust gases
- Automatic/Semi-automatic calibration
- Protection class up to IP65
- Cost-effective/Efficient
- Environmental protection thanks to reduced pollution emissions
- Efficiency improvement and cost minimization
- Energy savings on current and fuel
- Short commissioning times
- Low-maintenance and sturdy
- Customised solutions
- O₂ range of measuring 0 - 21 %
- Measurement directly in moist flue gas up to 1400 °C (in situ)
- Rapid reaction, setting and response time
- Continuous measurement value recording of oxygen (O₂), oxidisable flue gas components (CO/H₂) and NO_x
- Various explosive-proof designs

The following also applies to CO_e and NO_x measuring systems:

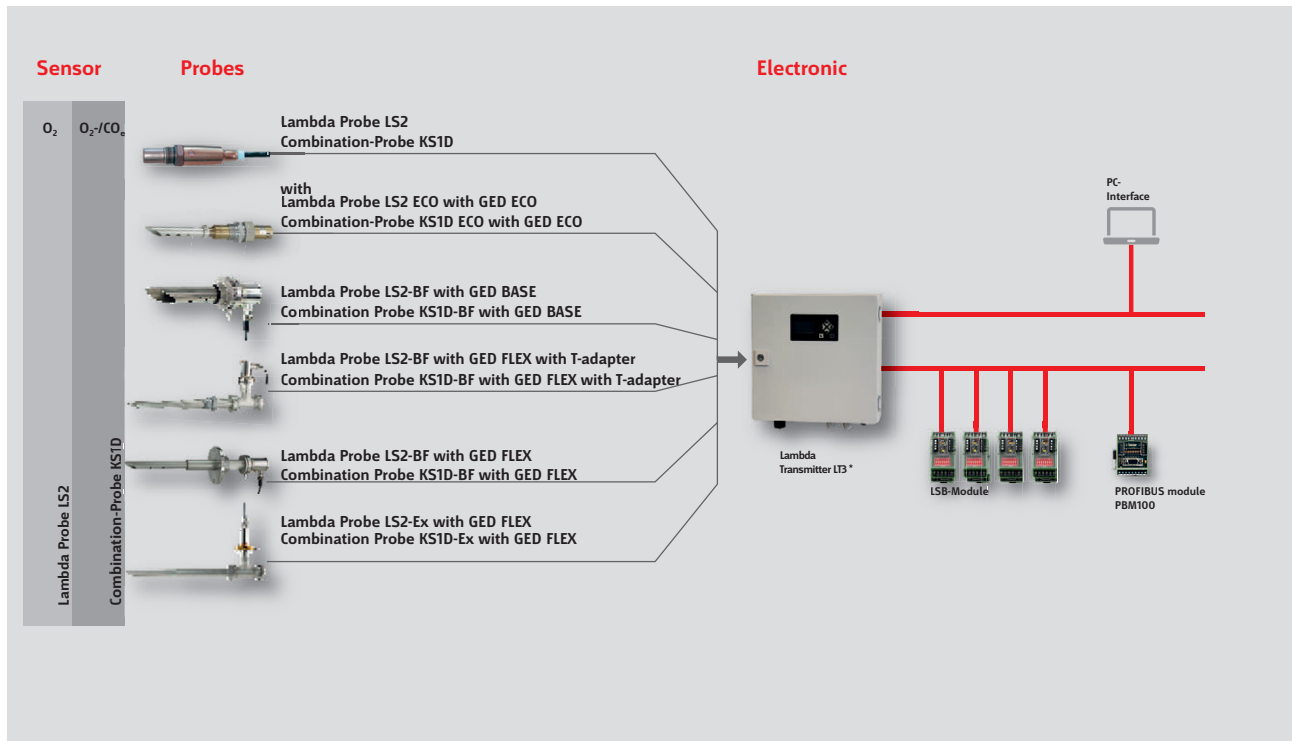
- Clear and reliable detection of unburnt residue (CO/H₂) or NO_x
- Independent of infiltration air
- Range of measuring for CO_e: 0 to 10.000 ppm
- NO_x range of measuring: 0 to 3.100 ppm

Measuring system selection criteria.

Selection criteria



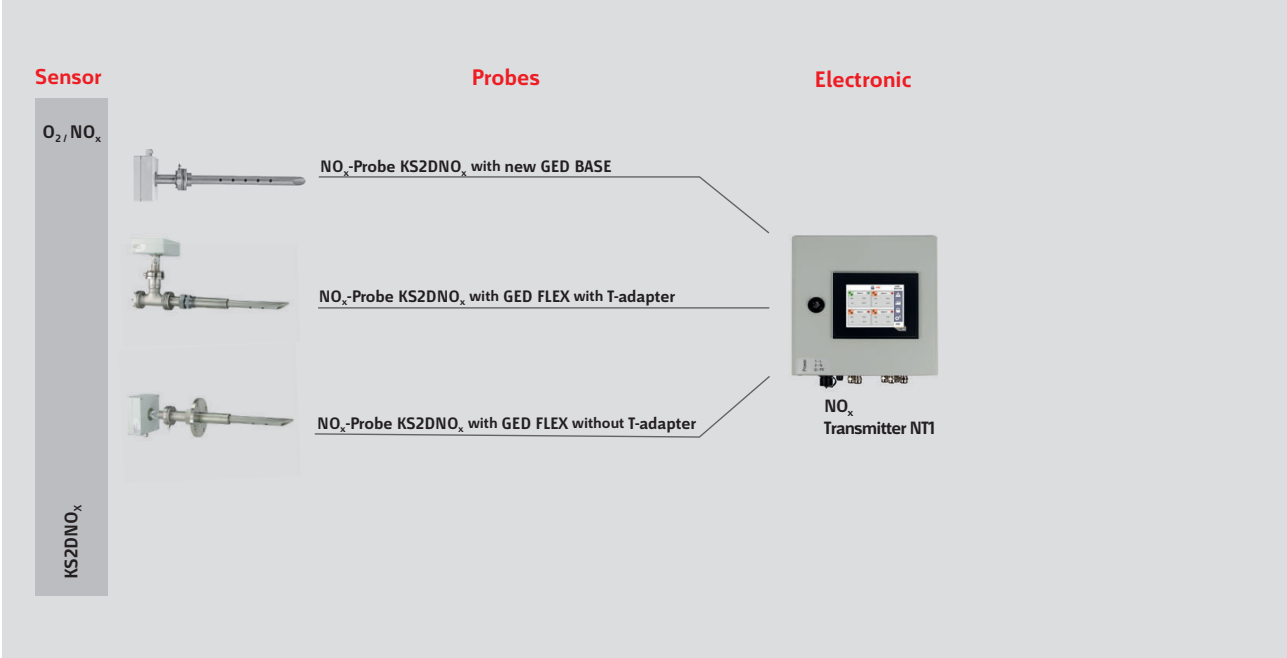
Function overview LT3 with KS1D/LS2.



Function overview LT2 with KS1D/LS2.

Measuring system selection criteria.

Selection criteria



Function overview of NT1 NO_x Transmitter

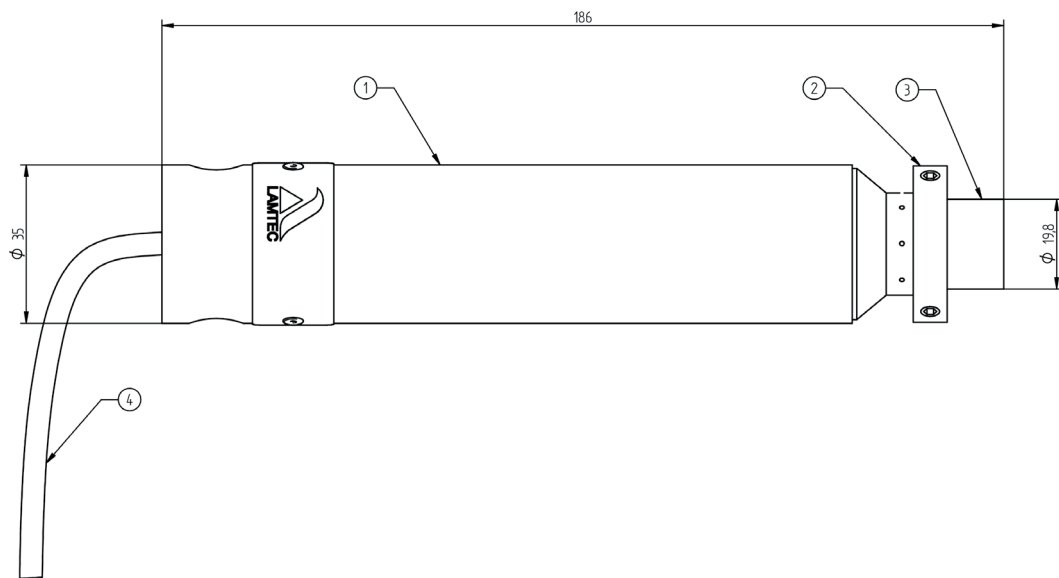
LS2 ECO Lambda Probe.

Technical data



LS2 ECO Lambda Probe

Item number	650R2000 LS2 ECO (cable length 2 m) 650R2007 LS2 ECO (cable length 5 m)	Dimensions [mm]	see dimensional drawings
Application	LS2 Lambda Probe for measurement of oxygen (O ₂)	Probe housing material Connecting pipework material	1.4571/1.4301 nickel plated copper FEP insulation
Range of measuring	O ₂ : 0 ... 21 % O ₂	Weight [kg]	0.56
Measurement accuracy	O ₂ : ±5 % from measurement value	Protection class	IP42
Response time	O ₂ : t ₆₀ : < 3 s t ₉₀ : < 9 s	Life time	> 3 years (in case of light heating oil and natural gas)
Heating power	10 ... 25 W (depending on design, measuring gas temperature, measuring speed)	Permissible flue gas temperature on probe head	≤ 300 °C
Heating-up time	10 minutes until the operating temperature is reached		
Ideal flue gas speed	1-6 m/s (T<100°C) 1-12 m/s (T>100°C)		
Dust concentration	≤ 100 mg/m ³		



Dimensional drawing of LS2 ECO Lambda Probe

- 1 LS2 ECO Lambda Probe
- 2 Locking ring for GED ECO
- 3 Probe head

Order information

Designation/type	Order no.
LT3 Lambda Transmitter, conf. for LS2	657R51 / ... / LS2R/ ...
GED ECO measuring Gas Extraction Device	655R1001 / R1002 / R1003
Probe installation fitting (PIF)	655R1010 or R1016
Half collar R1 1/4" DIN 2986 steel, suitable for 655R1010	655R1012
Half collar R1 1/4" DIN 2986 stainless steel 1.4571, suitable for 655R1016	655R1015

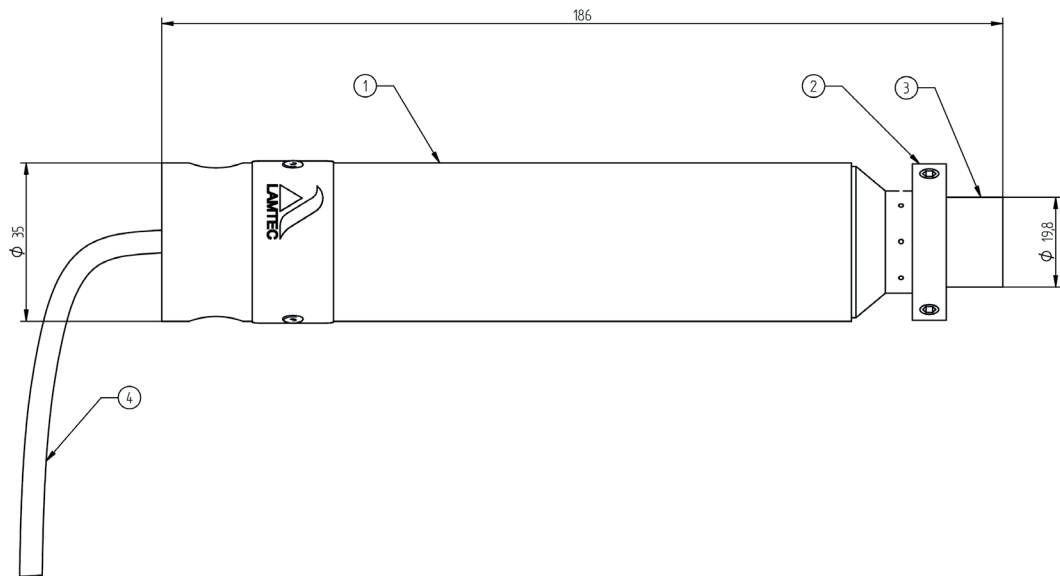
KS1D ECO Combination Probe.

Technical data



KS1D ECO Combination Probe

Item number	656R2000 KS1D ECO (cable length 2 m) 656R2002 KS1D ECO (cable length 5 m)	Dimensions [mm]	see dimensional drawings
Application	KS1D Combination Probe for simultaneous measurement of oxygen (O ₂) and oxidising gas constituents CO _e (CO/H ₂).	Probe housing material Connecting pipework material	1.4571/1.4301 nickel plated copper FEP insulation
Range of measuring	O ₂ : 0 ... 21 % O ₂ CO _e : 0 ... 1,000 ppm (0 ... 10,000 ppm on request)	Weight [kg]	0.56
Measurement accuracy	O ₂ : ±5 % from measurement value CO _e : ±25 % of measurement value - not better than ± 20 ppm	Protection class	IP42
Response time	O ₂ : t60: < 3 s t90: < 9 s CO _e : t60: < 3 s (electronically filtered at factory < 9 s) t90: < 4 s (electronically filtered at factory < 13 s)	Life time	> 3 years (in case of light heating oil and natural gas)
Heating power	10 ... 25 W (depending on design, measuring gas temperature, measuring speed)	Approval	DIN EN 16340 with LT3 or LT3-F
Heating-up time	10 minutes until the operating temperature is reached	Permissible flue gas temperature on probe head	≤ 300 °C
Ideal flue gas speed	1-6 m/s (T<100°C) 1-12 m/s (T>100°C)		
Dust concentration	≤ 100 mg/m ³		



Dimensional drawing of KS1D Combination Probe

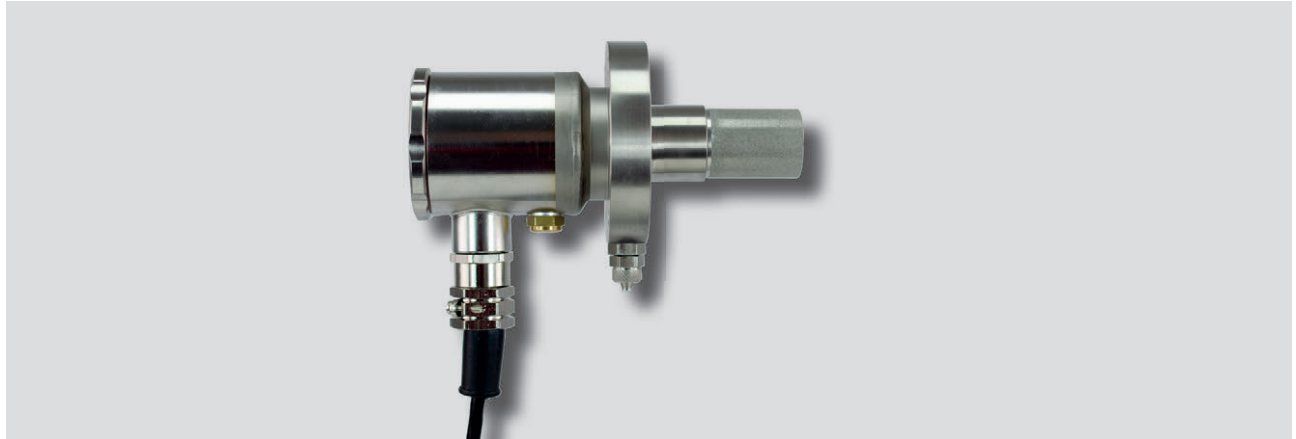
- 1 KS1D ECO Lambda Probe
- 2 Locking ring for GED ECO
- 3 Probe head
- 4 Cable

Order information

Designation/type	Order no.
LT3-F Lambda Transmitter in wall mounting housing (for CO/H ₂ control)	657R50 / ...KS1D
LT3 Lambda Transmitter in wall mounting housing (for CO/H ₂ monitoring)	657R51 / ...KS1D
Measuring Gas Extraction Device (GED ECO)	655R1001 / R1002 / R1003
Probe installation fitting (PIF)	655R1010 or R1016
Half collar R1 1/4" DIN 2986 steel, suitable for 655R1010	655R1012
Half collar R1 1/4" DIN 2986 stainless steel 1.4571, suitable for 655R1016	655R1015

LS2-BF Lambda Probe.

Technical data



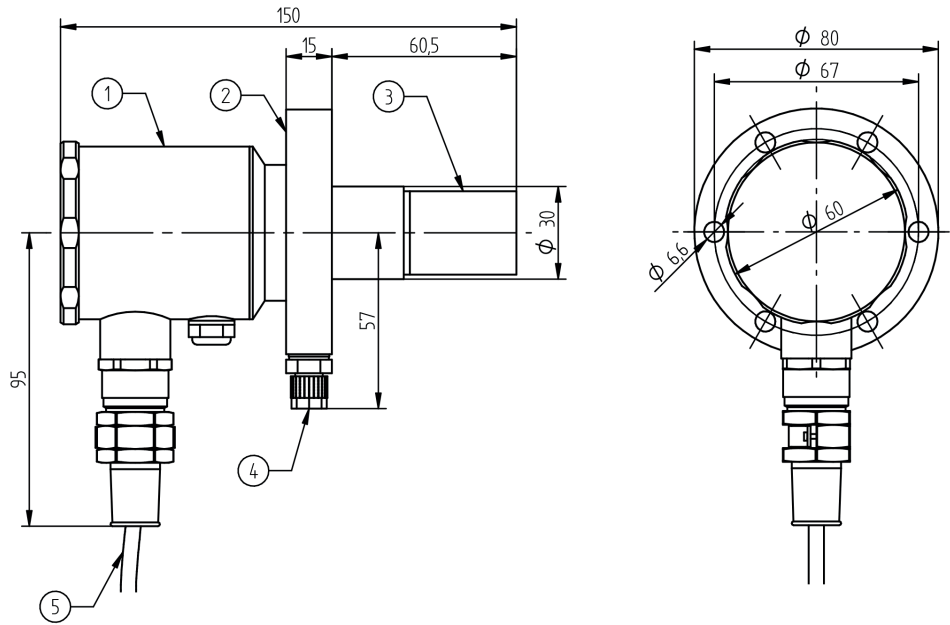
LS2-BF Lambda Probe

Item number	650R1615 LS2-BF (cable length 2 m)	Dimensions [mm]	see dimensional drawings
Application	LS2-BF Lambda Probe for measurement of oxygen (O ₂),	Probe housing material Connecting pipework material	1.4571 Nickel plated copper, FEP insulation
Range of measuring	O ₂ : 0 ... 21 % O ₂	Weight [kg]	1.3
Measurement accuracy	O ₂ : ±5 % of measurement value - not better than +/- 0.3 % by vol.	Protection class	IP65
Response time	O ₂ : t ₆₀ : < 3 s t ₉₀ : < 9 s	Life time	> 3 years (in case of light heating oil and natural gas)
Heating power	10 ... 25 W (depending on design, measuring gas temperature, measuring speed)	Permissible flue gas temperature on probe head	≤ 450 °C
Heating-up time	10 minutes until the operating temperature is reached		
Ideal flue gas speed	GED BASE: 1-10 m/s (T<100 °C) 1-20 m/s (T>100 °C) GED FLEX 0-40 m/s		
Dust concentration	<200 mg/m ³ with GED BASE <1000 mg/m ³ with GED FLEX and purging		

Order information

Designation/type	Order no.
LS2-BF "BaseFlex" Lambda Probe, IP65, cable length 2 m, 5-pole round plug	650R1615
For measurements without purge operation, without fully automatic calibration	
LT3 Lambda Transmitter, configured for LS2	657R51 / .../ LS2R /
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
GED FLEX installation options	see GED FLEX accessories
GED BASE measuring Gas Extraction Device	655R142X + 655R1450 or 655R1451
GED BASE installation options	see GED BASE accessories
For measurements with purge operation	
LT2 Lambda Transmitter, configured for LS2 in "purge operation" application	657R102 / LS2R / 3A /...
Purge unit	657R0934
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
Inner pipe extension for stainless steel/Inconel variant	655R1574/75
T-adapter for purge operation, stainless steel 1.4571/1.4404, hose connection 12/10 mm	655R1566
T-adapter for injector acceleration and purge operation, stainless steel 1.4571/1.4404	655R1568
GED FLEX installation options	see GED FLEX accessories
For measurements with fully automatic calibration system and purge operation	
LT2 Lambda Transmitter, configured for LS2 in "fully automatic calibration system" and "purge operation" application	657R102 / LS2R / 6HTVA /...
Dedusting/Purge device, IP65, for GED FLEX T-adapter	657R0934
Fully automatic calibration system for measurements with purging operation (cyclical triggering) and fully automatic calibration	657R0940
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
Inner pipe extension for stainless steel/Inconel variant	655R1574/75
T-adapter for purge operation, stainless steel 1.4571/1.4404, hose connection 12/10 mm	655R1566
T-adapter for injector acceleration and purge operation, stainless steel 1.4571/1.4404	655R1568
GED FLEX installation options	see GED FLEX accessories
For measurements with fully automatic calibration system	
LT2 Lambda Transmitter, configured for LS2 in "fully automatic calibration system" application	657R102 / LS2R / V /...
Fully automatic calibration system for measurements with purging operation (cyclical triggering) and fully automatic calibration	657R0940
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
GED FLEX installation options	see GED FLEX accessories
GED BASE measuring Gas Extraction Device	655R142X + 655R1450 or 655R1451
GED BASE installation options	see GED BASE accessories

LS2-BF Lambda Probe.

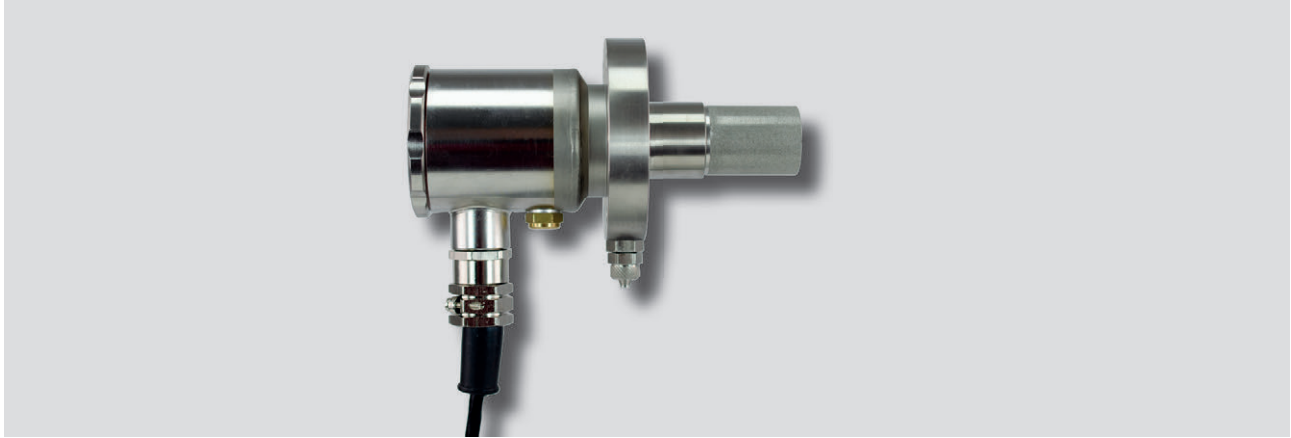


LS2-BF Lambda Probe dimensional drawing

- 1 Junction box
- 2 Assembly flange
- 3 Max. measuring gas temperature on sintered metal filter
- 4 Hose connection
- 5 Connecting cable

KS1D-BF Combination Probe.

Technical data

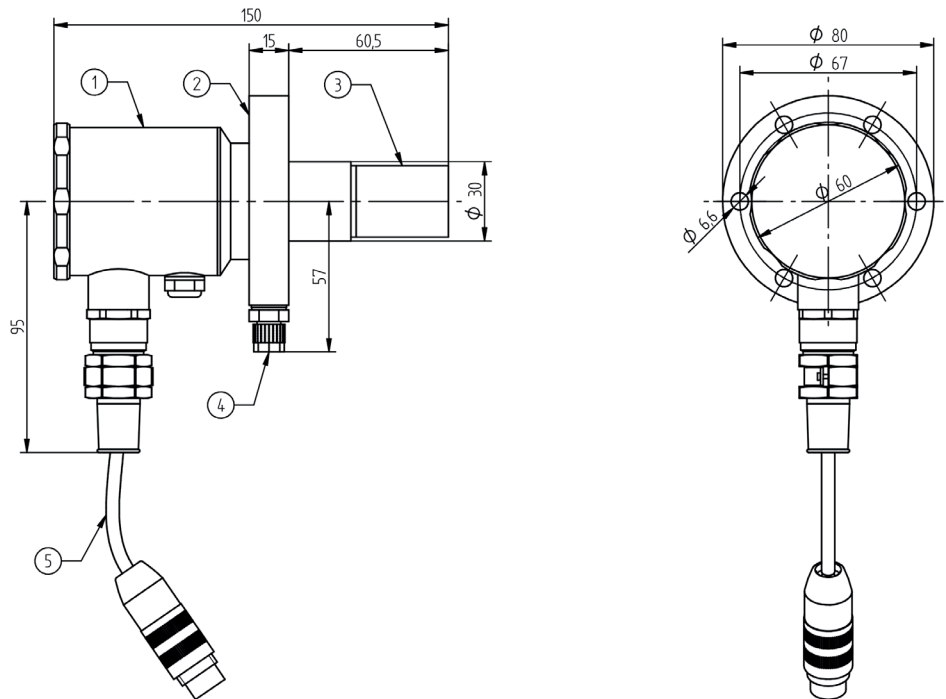


KS1D-BF Combination Probe

Item number	656R2115 KS1D-BF (cable length 2 m)	Dimensions [mm]	see dimensional drawings
Application	KS1D-BF Lambda Probe for measurement of oxygen (O ₂) and oxidising gas constituents CO _e (CO/H ₂).	Probe housing material Connecting pipework material	1.4571/1.4301 nickel plated copper, FEP insulation
Range of measuring	O ₂ : 0 ... 21 % O ₂ CO _e : 0 ... 1.000 ppm (0 ... 10.000 on request)	Weight [kg]	1.3
Measurement accuracy	O ₂ : ±5 % of measurement value - not better than ± 0.3 % by vol. CO _e : ± 25 % of measurement value - not better than ± 20 ppm	Protection class	IP65
Response time	O ₂ : t60: < 3 s, t90: < 9 s CO _e : t60: < 3 s (electronically filtered at factory < 9 s) t90: < 4 s (electronically filtered at factory < 13 s)	Life time	> 3 years (in case of light heating oil and natural gas)
Heating power	10 ... 25 W (depending on design, measuring gas temperature, measuring speed)	Approval	DIN EN 16340 with LT3 or LT3-F
Heating-up time	10 minutes until the operating temperature is reached	Permissible flue gas temperature on probe head	≤ 450 °C
Ideal flue gas speed	Without GED: 1 m/s ≤ X ≤ 6 m/s With GED BASE: 1 m/s ≤ X ≤ 10 m/s With GED FLEX: 0.1 m/s ≤ X depending on the version		
Dust concentration	<200 mg/m ³ with GED BASE <1000 mg/m ³ with GED FLEX and purging		

Order information

Designation/type	Order no.
KS1D-BF "BaseFlex" Combination Probe, cable length 2 m, 5-pole round plug, IP65	656R2115
KS1D-BF "BaseFlex" Combination Probe, cable length 5 m, 5-pole round plug, IP65	656R2118
For measurements without purge operation, without fully automatic calibration	
LT3 or LT3-F Lambda Transmitter, configured for KS1D	657R51 / .../ KS1D /
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
GED FLEX installation options	see GED FLEX accessories
GED BASE measuring Gas Extraction Device	655R142X + 655R1450 or 655R1451
GED BASE installation options	see GED BASE accessories
For measurements with purge operation	
LT2 Lambda Transmitter, configured for KS1D in "purge operation" application	657R102 / KS1D / 3A /...
Purge unit	657R0934
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
Inner pipe extension for stainless steel/Inconel variant	655R1574/75
T-adapter for purge operation, stainless steel 1.4571/1.4404, hose connection 12/10 mm	655R1566
T-adapter for injector acceleration and purge operation, stainless steel 1.4571/1.4404	655R1568
GED FLEX installation options	see GED FLEX accessories
For measurements with fully automatic calibration system and purge operation	
LT2 Lambda Transmitter, configured for KS1D in "fully automatic calibration system" and "purge operation" application	657R102 / KS1D / 6HTVA /...
Dedusting/Purge device, IP65, for GED FLEX T-adapter	657R0934
Fully automatic calibration system for measurements with purging operation (cyclical triggering) and fully automatic calibration	657R0940
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
Inner pipe extension for stainless steel/Inconel variant	655R1574/75
T-adapter for purge operation, stainless steel 1.4571/1.4404, hose connection 12/10 mm	655R1566
T-adapter for injector acceleration and purge operation, stainless steel 1.4571/1.4404	655R1568
GED FLEX installation options	see GED FLEX accessories
For measurements with fully automatic calibration system	
LT2 Lambda Transmitter, configured for KS1D in "fully automatic calibration" application	657R102 / KS1D / V /...
Fully automatic calibration system for measurements with purging operation (cyclical triggering) and fully automatic calibration	657R0940
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
GED FLEX installation options	see GED FLEX accessories
GED BASE measuring Gas Extraction Device	655R142X + 655R1450 or 655R1451
GED BASE installation options	see GED BASE accessories

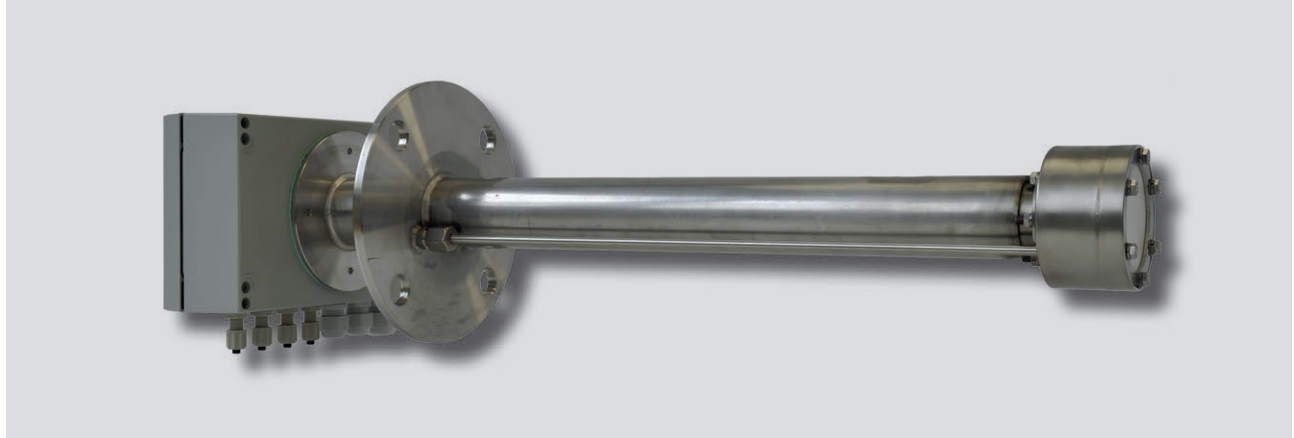


KS1D-BF Lambda Probe dimensional drawing

- 1 Junction box
- 2 Assembly flange
- 3 Max. measuring gas temperature on sintered metal filter
- 4 Hose connection
- 5 Connecting cable

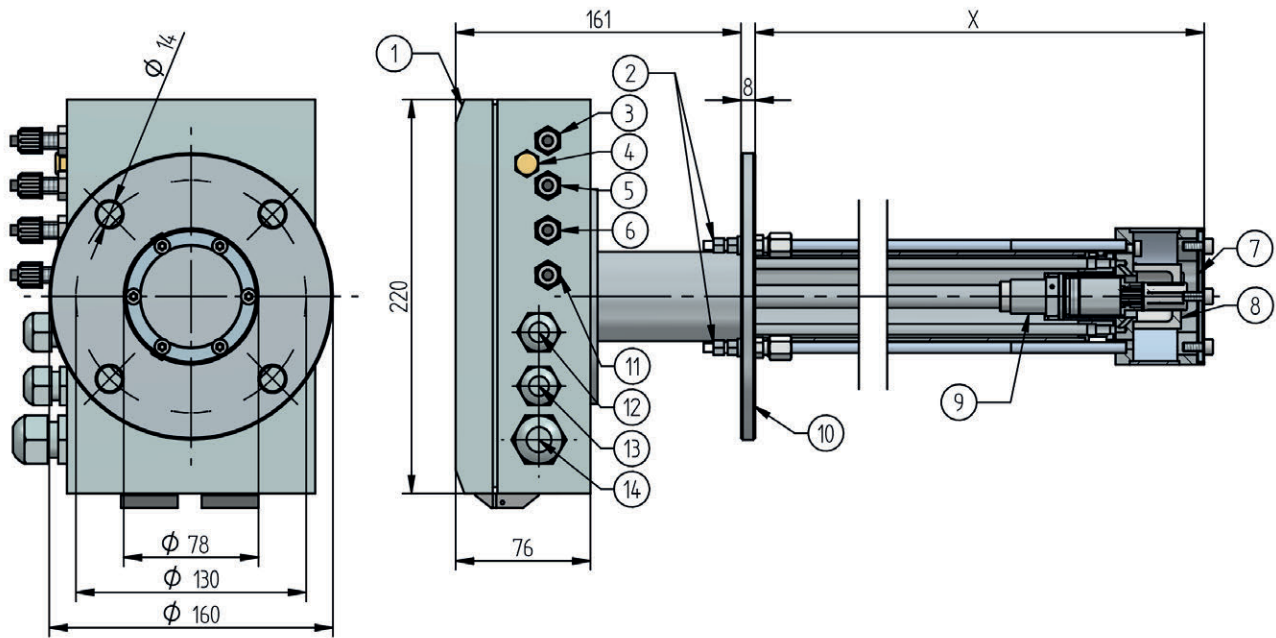
LS2-KAF Lambda Probe.

Technical data



LS2-KAF Lambda Probe

Item number	650R2230/AF (installation depth 500 mm) 650R2231/AF (installation depth 1000 mm) 650R2232/AF (installation depth 1500 mm)	Dimensions [mm]	see dimensional drawings
Application	LS2-KAF Lambda Probe for measurement of oxygen (O ₂)	Probe housing material Connecting pipework material	1.4571/1.4301 nickel plated copper, FEP insulation
Range of measuring	O ₂ : 0 ... 21 % O ₂	Weight [kg]	6.5 kg at 500 mm length
Measurement accuracy	O ₂ : ±5 % of measurement value - not better than ± 0.3 % by vol.	Protection class	IP65
Response time	O ₂ : t60: < 10 s	Life time	> 2 years when using heating oil and natural gas
Heating power	10 ... 25 W (depending on design, measuring gas temperature, measuring speed)	Flange adapter	DN65 PN6 with deviating pipe diameter DN80 flange type 655R0179/655R0180
Heating-up time	10 minutes until the operating temperature is reached	Permissible flue gas temperature on probe head	≤ 450 °C
Ideal flue gas speed	1 m/s ≤ X ≤ 16 m/s		
Dust concentration	Up to 2.000 mg/m ³		



LS2-KAF Lambda Probe dimensional drawing

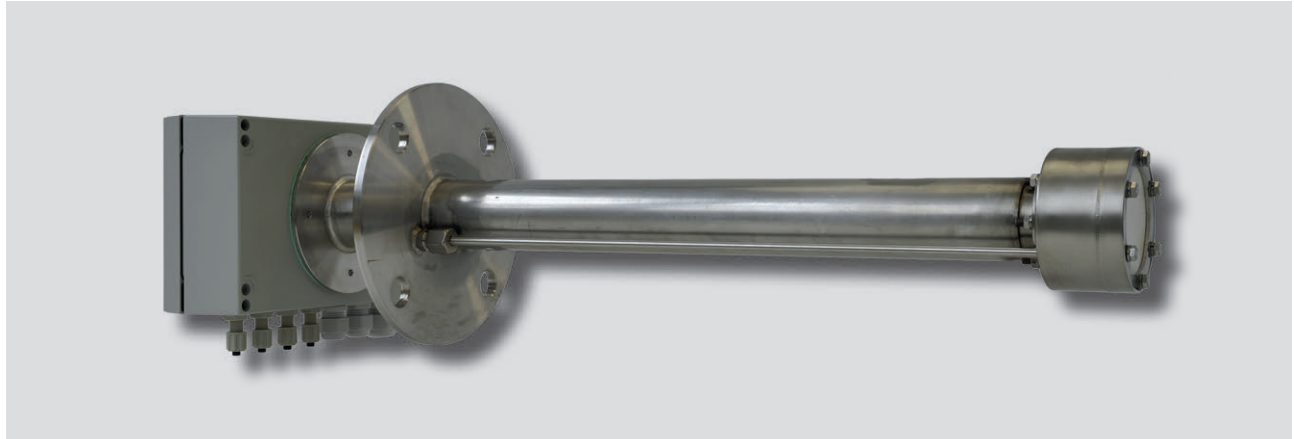
- 1 Probe connection box (PCB)
- 2 Hose connections 4/6 mm for "external filter purging" from solenoid valve
- Instrument air (pre pressure 6 bar)
- 3 Hose connection 4/6 mm for "calibrating gas" (pre pressure 0.3 bar)
Instrument air for offset calibration or test gas (e.g. 2 % by vol. O₂ in N₂)
- 4 Reference air outlet port
Hose connection 4/6 mm for "reference air" from solenoid valve
- Instrument air (pre pressure 0.3 bar)
- Air consumption approx. 10 l/h
- 5 Hose connection 4/6 mm for "internal filter purging" from solenoid valve
- Instrument air (pre pressure 3 bar)
- 6 Filter fabric
- 7 Sintered metal prefilter 20 µm
- 9 Sensor
- 10 Flange DN65PN6 with deviating pipe diameter DN80 (deviating flange thickness 8 mm)
- 11 Hose connections 4/6 mm for "pressure sensor" from solenoid valve
- 12 Screwed cable gland input M16 - reserve
- 13 Screwed cable gland input M16 - probe heater
- 14 Screwed cable gland input M20 - absolute pressure sensor, differential pressure sensor, probe signals

Order information

Designation/type	Order no.
LS2-KAF Lambda Probe, semi-automatic calibration, purging and filter fleece (filter disc), immersion depth from flange 500 mm	650R2230/AF
LS2-KAF Lambda Probe, semi-automatic calibration, purging and filter fleece (filter disc), immersion depth from flange 1,000 mm	650R2231/AF
LS2-KAF Lambda Probe, semi-automatic calibration, purging and filter fleece (filter disc), immersion depth from flange 1,500 mm	650R2232/AF
LT2 Lambda Transmitter, configured for LS2 in "semi-automatic calibration and purging" design	657R102 / LS2 / 4KA /...
Flange DN65 PN6 with DN 80 bore (when using assembly flange 655R1451) Material St37-2, cathodic dip coating Material 1.4571 stainless steel	655R0179 655R0180
Pneumatic unit 24 VDC for controlling the purge unit, cyclic control is provided by the LT2 (can be parameterised).	650R2080

KS1D-KAF Combination Probe.

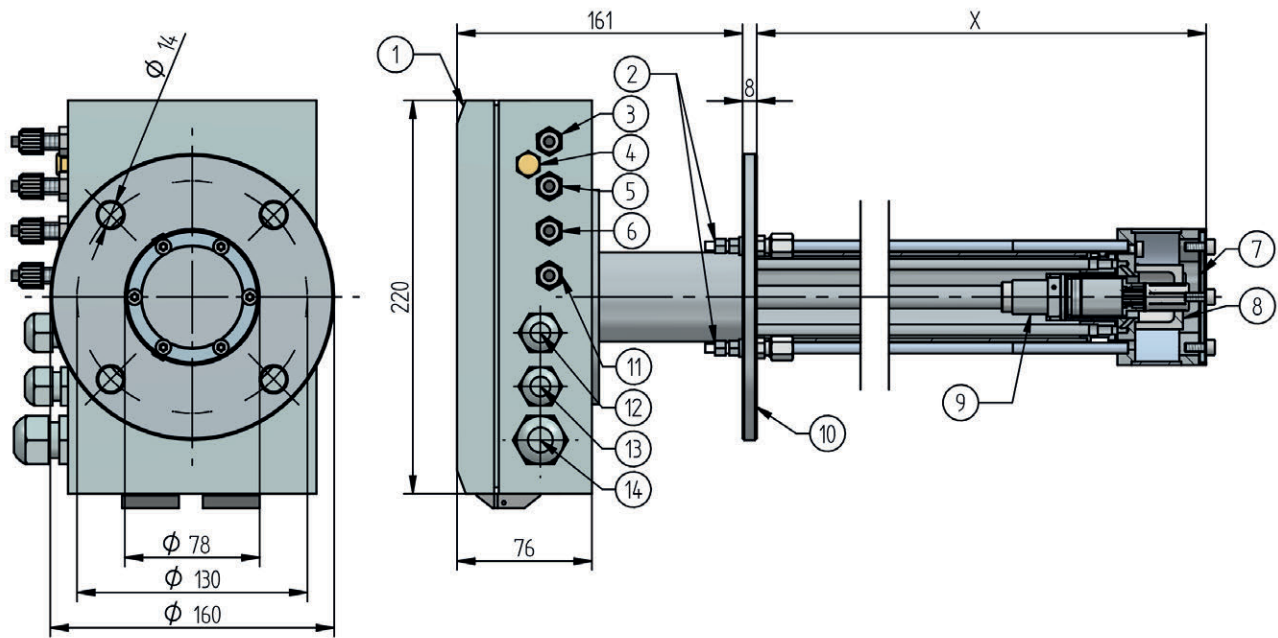
Technical data



KS1D-KAF Combination Probe

Item number	656R2230/AF (installation depth 500 mm) 656R2231/AF (installation depth 1000 mm) 656R2232/AF (installation depth 1500 mm)	Dimensions [mm]	see dimensional drawings
Application	KS1D-KAF Combination Probe for measurement of oxygen (O ₂) and oxidising gas constituents CO _e (CO/H ₂).	Probe housing material Connecting pipework material	1.4571/1.4301 nickel plated copper, FEP insulation
Range of measuring	O ₂ : 0 ... 21 % O ₂ CO _e : 0 ... 1.000 ppm CO _e (0 ... 10.000 ppm on request)	Weight [kg]	6.5 kg at 500 mm length
Measurement accuracy	O ₂ : ±5 % of measurement value - not better than ± 0.3 % by vol. CO _e : ± 25 % of measurement value - not better than ± 20 ppm	Protection class	IP65
Response time	O ₂ : t ₆₀ : < 10 s CO _e : t ₆₀ : < 5 s	Life time	> 2 years when using heating oil and natural gas
Heating power	10 ... 25 W (depending on design, measuring gas temperature, measuring speed)	Flange adapter	DN65 PN6 with deviating pipe diameter DN80 flange type 655R0179/655R0180
Heating-up time	10 minutes until the operating temperature is reached	Permissible flue gas temperature on probe head	≤ 450 °C
Ideal flue gas speed	1 m/s ≤ X ≤ 16 m/s		
Dust concentration	Up to 2,000 mg/m ³		

KS1D-KAF Combination Probe.



Dimensional drawing of KS1D-KAF Combination Probe

- 1 Probe connection box (PCB)
- 2 Hose connections 4/6 mm for "external filter purging" from solenoid valve
- Instrument air (pre pressure 6 bar)
- 3 Hose connection 4/6 mm for "calibrating gas" (pre pressure 0.3 bar)
- Instrument air for offset calibration or test gas (e.g. 2 % by vol. O₂ in N₂)
- 4 Reference air outlet port
Hose connection 4/6 mm for "reference air" from solenoid valve
- Instrument air (pre pressure 0.3 bar)
- Air consumption approx. 10 l/h
- 5 Hose connection 4/6 mm for "internal filter purging" from solenoid valve
- Instrument air (pre pressure 3 bar)
- 6 Filter fabric
- 7 Sintered metal prefilter 20 µm
- 8 Sensor
- 9 Flange DN65PN6 with deviating pipe diameter DN80 (deviating flange thickness 8 mm)
- 10 Hose connections 4/6 mm for "pressure sensor" from solenoid valve
- 11 Screwed cable gland input M16 - reserve
- 12 Screwed cable gland input M16 - probe heater
- 13 Screwed cable gland input M20 - absolute pressure sensor, differential pressure sensor, probe signals
- 14

Order information

Designation/type	Order no.
KS1D-KAF Combination Probe, semi-automatic calibration, purging and filter fleece (filter disc), immersion depth from flange 500 mm	656R2230/AF
KS1D-KAF Combination Probe, semi-automatic calibration, purging and filter fleece (filter disc), immersion depth from flange 1,000 mm	656R2231/AF
KS1D-KAF Combination Probe, semi-automatic calibration, purging and filter fleece (filter disc), immersion depth from flange 1,500 mm	656R2232/AF
LT2 Lambda Transmitter, configured for KS1D in "semi-automatic calibration and purging" design	657R102 / KS1D / 4KA /...
Flange DN65 PN6 with DN 80 bore (when using assembly flange 655R1451)	655R0179
Material St37-2, cathodic dip coating	655R0180
Material 1.4571 stainless steel	
Pneumatic unit 24 VDC for controlling the purge unit.	650R2080

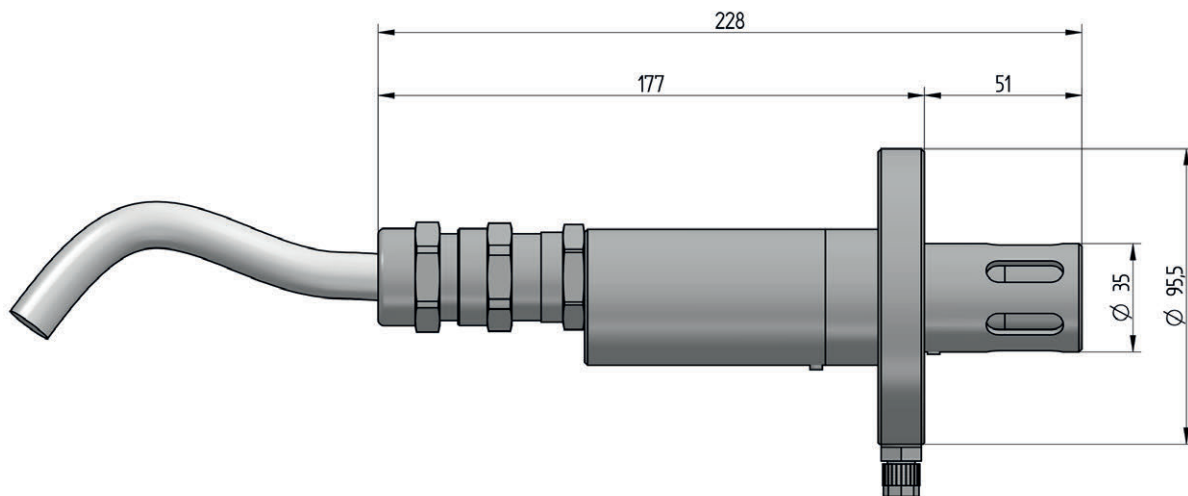
LS2 Ex Lambda Probe.

Technical data



LS2 Ex Lambda Probe

Item number	650R1620 LS2-Ex Lambda Probe	Dimensions [mm]	see dimensional drawings
Application	LS2-Ex Lambda Probe for direct measurement of oxygen (O ₂)	Probe housing material Connecting pipework material	1.4571 nickel plated copper, FEP insulation
Range of measuring	O ₂ : 0 ... 21 % O ₂	Weight [kg]	1.3
Measurement accuracy	O ₂ : ±5 % of measurement value not better than ± 0.3 % by vol.	Protection class	IP65
Response time	O ₂ : t ₆₀ : < 3 s t ₉₀ : < 9 s	Life time	> 3 years when using heating oil and natural gas
Heating power	10 ... 25 W (depending on design, measuring gas temperature, measuring speed)	Explosion protection approval	II2G Ex db (IIB+H2) T4 Gb II2D Ex Tb IIIC T135°C Db Certificate number: IECEX EPS 23.0059X EPS 23 ATEX 1 226 X
Heating-up time	10 minutes until the operating temperature is reached	Permissible flue gas temperature on probe head	≤ 450 °C -20 ... +60 °C in hazardous area
Ideal flue gas speed	without GED: - 1 m/s ≤ X ≤ 6 m/s - T > 100 °C 1 m/s ≤ X ≤ 20 m/s with GED FLEX: - 0.1 m/s ≤ X depending on the version		
Dust concentration	<1.000 mg/m ³ with GED FLEX and purging		



Dimensional drawing of LS2-Ex Lambda Probe

Order information

Designation/type	Order no.
LS2 Ex Lambda Probe, cable length 3 m	650R1620
For measurements without purge operation, without fully automatic calibration	
LT3 Lambda Transmitter, configured for LS2	657R5140 / ... / LS2 /
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
GED FLEX installation options	see GED FLEX accessories
For measurements with purge operation	
LT2 Lambda Transmitter, configured for LS2 in "purge operation" application	657R102 / LS2 / 3A / ... / z63
Purge unit (no explosion protection approval)	657R0934
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
Inner pipe extension for stainless steel/Inconel variant	655R1574/75
T-adapter for purge operation, stainless steel 1.4571/1.4404, hose connection 12/10 mm	655R1566
T-adapter for injector acceleration and purge operation, stainless steel 1.4571/1.4404	655R1568
GED FLEX installation options	see GED FLEX accessories
LT2 EExd housing with inspection glass and 9x control buttons, IP66	657R0165BD
For measurements with fully automatic calibration system and purge operation	
LT2 Lambda Transmitter, configured for LS2 in "fully automatic calibration system" and "purge operation" application	657R102 / LS2 / 6HTVA / ... / z63
Dedusting/Purge device, IP65, for GED FLEX T-adapter (no explosion protection approval)	657R0934
Fully automatic calibration system for measurements with purging operation (cyclical triggering) and fully automatic calibration (no explosion protection approval)	657R0940
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
Inner pipe extension for stainless steel/Inconel variant	655R1574/75
T-adapter for purge operation, stainless steel 1.4571/1.4404, hose connection 12/10 mm	655R1566
T-adapter for injector acceleration and purge operation, stainless steel 1.4571/1.4404	655R1568
GED FLEX installation options	see GED FLEX accessories
LT2 EExd housing with inspection glass and 9x control buttons, IP66	657R0165BD

Order information

Designation/type	Order no.
For measurements with fully automatic calibration system	
LT2 Lambda Transmitter, configured for LS2 in "fully automatic calibration system" application	657R102 / LS2 / V /.../ z63
Fully automatic calibration system for measurements with purging operation (cyclical triggering) and fully automatic calibration (no explosion protection approval)	657R0940
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
GED FLEX installation options	see GED FLEX accessories
LT2 EExd housing with inspection glass and 9x control buttons, IP66	657R0165BD

KS1D-Ex Combination Probe.

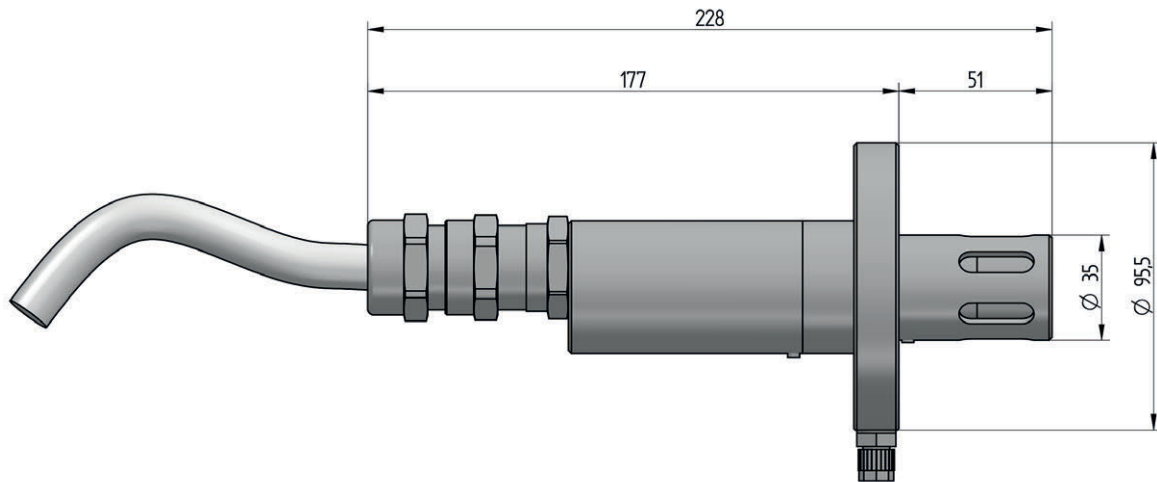
Technical data



KS1D-Ex Combination Probe

Item number	656R2120 KS1D-Ex Combination Probe	Dimensions [mm]	see dimensional drawings
Application	KS1D-Ex Combination Probe for direct measurement of oxygen (O ₂) and detection of oxidising flue gas components CO _e (CO/H ₂)	Probe housing material Connecting pipework material	1.4571 Nickel plated copper, FEP insulation
Range of measuring	O ₂ : 0 - 21 % O ₂ CO _e : 0 - 1.000 ppm CO _e (0 ... 10.000 ppm on request)	Weight [kg]	1.3
Measurement accuracy	O ₂ : ±5 % of measurement value - not better than ± 0.3 % by vol. CO _e : ± 25 % of measurement value not better than ± 20 ppm	Protection class	IP65
Response time	O ₂ : t60: < 3 s t90: < 9 s CO _e : t60: < 3 s (electronically filtered at factory < 9 s) t90: < 4 s (electronically filtered at factory < 13 s)	Life time	> 3 years when using heating oil and natural gas
Heating power	10 ... 25 W (depending on design, measuring gas temperature, measuring speed)	Explosion protection approval	II2G Ex db (IIB+H2) T4 Gb II2D Ex Tb IIIC T135°C Db Certificate number: IECEX EPS 23.0059X EPS 23 ATEX 1 226 X
Heating-up time	10 minutes until the operating temperature is reached	Permissible flue gas temperature on probe head	≤ 450 °C -20 ... +60 °C in hazardous area
Ideal flue gas speed	Without GED: 1 m/s ≤ X ≤ 6 m/s With GED FLEX: 0.1 m/s ≤ X depending on the version		
Dust concentration	<1.000 mg/m ³ with GED FLEX and purging		

KS1D-Ex Combination Probe.



Dimensional drawing of KS1D-Ex Combination Probe

Order information

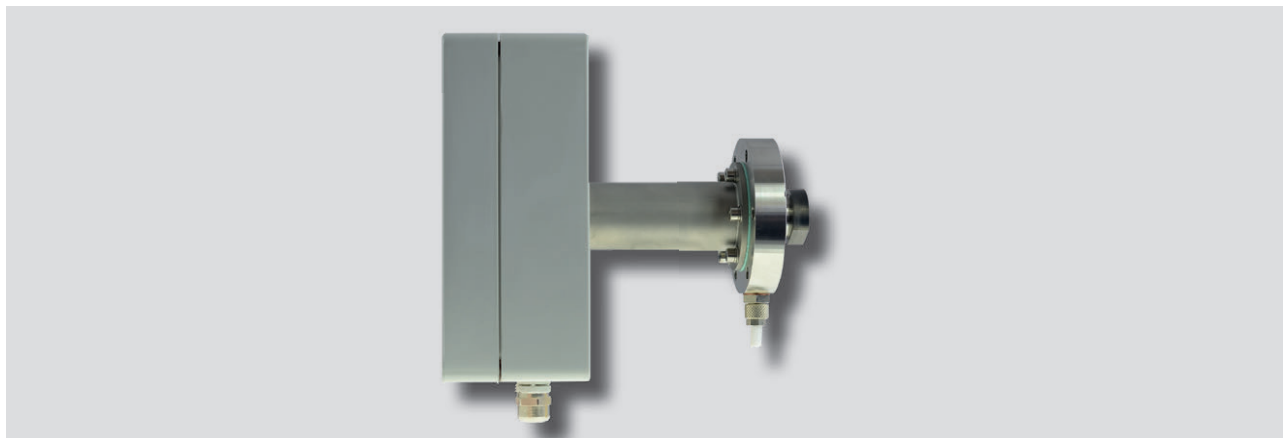
Designation/type	Order no.
KS1D-Ex Combination Probe, cable length 3 m	656R2120
For measurements without purge operation, without fully automatic calibration	
LT3 Lambda Transmitter, configured for LS2	657R5140 / .../ 00 /
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
GED FLEX installation options	see GED FLEX accessories
For measurements with purge operation	
LT2 Lambda Transmitter, configured for LS2 in "purge operation" application	657R102 / KS1D / 3A /.../z63
Purge unit (no explosion protection approval)	657R0934
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
Inner pipe extension for stainless steel/Inconel variant	655R1574/75
T-adapter for purge operation, stainless steel 1.4571/1.4404, hose connection 12/10 mm	655R1566
T-adapter for injector acceleration and purge operation, stainless steel 1.4571/1.4404	655R1568
GED FLEX installation options	see GED FLEX accessories
LT2 EExd housing with inspection glass and 9x control buttons, IP66	657R0165BD
For measurements with fully automatic calibration system and purge operation	
LT2 Lambda Transmitter, configured for LS2 in "fully automatic calibration system" and "purge operation" application	657R102 / KS1D / 6HTVA/.../z63
Dedusting/Purge device, IP65, for GED FLEX T-adapter (no explosion protection approval)	657R0934
Fully automatic calibration system for measurements with purging operation (cyclical triggering) and fully automatic calibration (no explosion protection approval)	657R0940
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
Inner pipe extension for stainless steel/Inconel variant	655R1574/75
T-adapter for purge operation, stainless steel 1.4571/1.4404, hose connection 12/10 mm	655R1566
T-adapter for injector acceleration and purge operation, stainless steel 1.4571/1.4404	655R1568
GED FLEX installation options	see GED FLEX accessories
LT2 EExd housing with inspection glass and 9x control buttons, IP66	657R0165BD

Order information

Designation/type	Order no.
For measurements with fully automatic calibration system	
LT2 Lambda Transmitter, configured for LS2 in "fully automatic calibration system" application	657R102 / KS1D / VI.../z63
Fully automatic calibration system for measurements with purging operation (cyclical triggering) and fully automatic calibration (no explosion protection approval)	657R0940
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
GED FLEX installation options	see GED FLEX accessories
LT2 EExd housing with inspection glass and 9x control buttons, IP66	657R0165BD

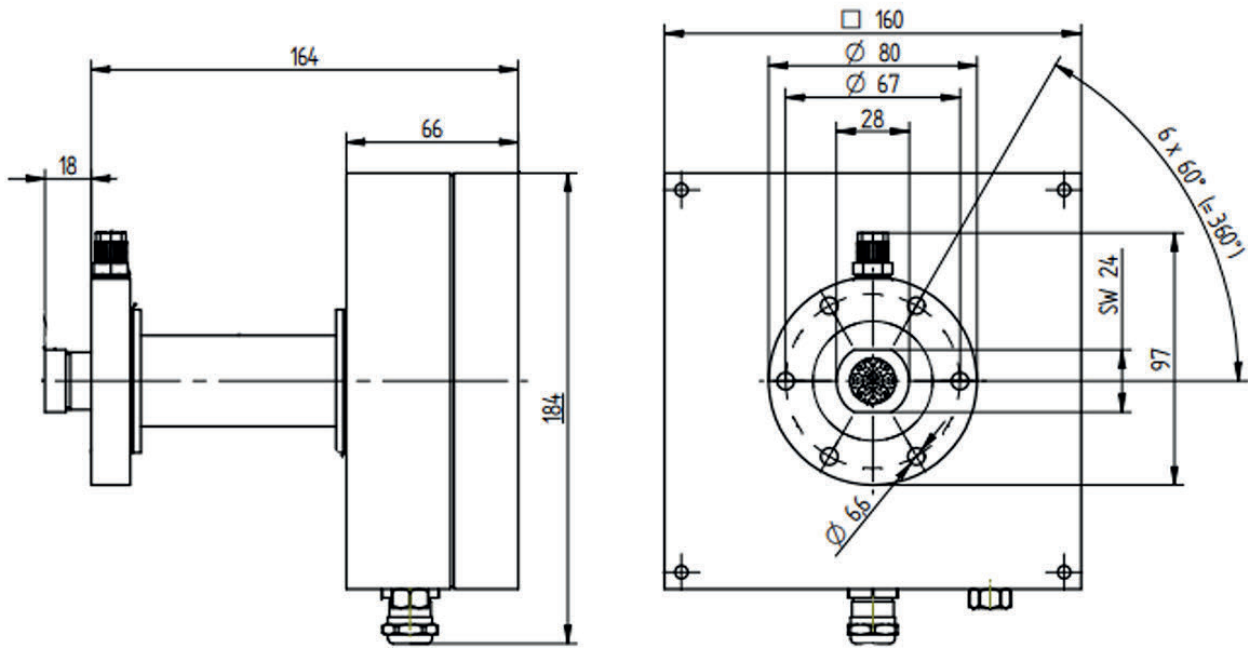
KS2DNO_x Combination Probe.

Technical data



KS2DNO_x Combination Probe

Item number	640R0010 KS2DNO _x Combination Probe	Dimensions [mm]	see dimensional drawings
Application	In situ measurement of O ₂ , NO and NO ₂ concentrations, summarized as NO _x .	Probe housing material Junction box material	1.4571/1.4404 Polycarbonate
Range of measuring	O ₂ : 0 ... 21 % O ₂ NO _x : 0 ... 3.100 ppm or 0 ... 6.374 mg/Nm ³	Weight [kg]	1.85
Measurement accuracy	O ₂ : ± 8 % of measurement value not better than ± 0.2 % by vol. NO _x : ± 10 % of measurement value - not better than ± 3 ppm or 6 mg/Nm ³	Protection class	IP65
Response time	O ₂ : t ₆₀ : < 10 s NO _x : t ₆₀ : < 10 s	Life time	> 3 years when using heating oil and natural gas
Heating power	10 ... 25 W (depending on design, measuring gas temperature, measuring speed)	Flange adapter	DN65 PN6 flange type 655R0179 / 655R0180
Heating-up time	Stand-by with limited measure- ment accuracy after approx. 3 min. Ready for measurement/ calibration with specified measurement accuracy after approx. 7 min.	Permissible flue gas temperature on probe head	< 450 °C
Ideal flue gas speed	GED BASE: 1-10 m/s (T<100 °C) 1-20 m/s (T>100 °C) GED FLEX 0-40 m/s		
Dust concentration	<200 mg/m ³ with GED BASE <1000 mg/m ³ with GED FLEX and purging		



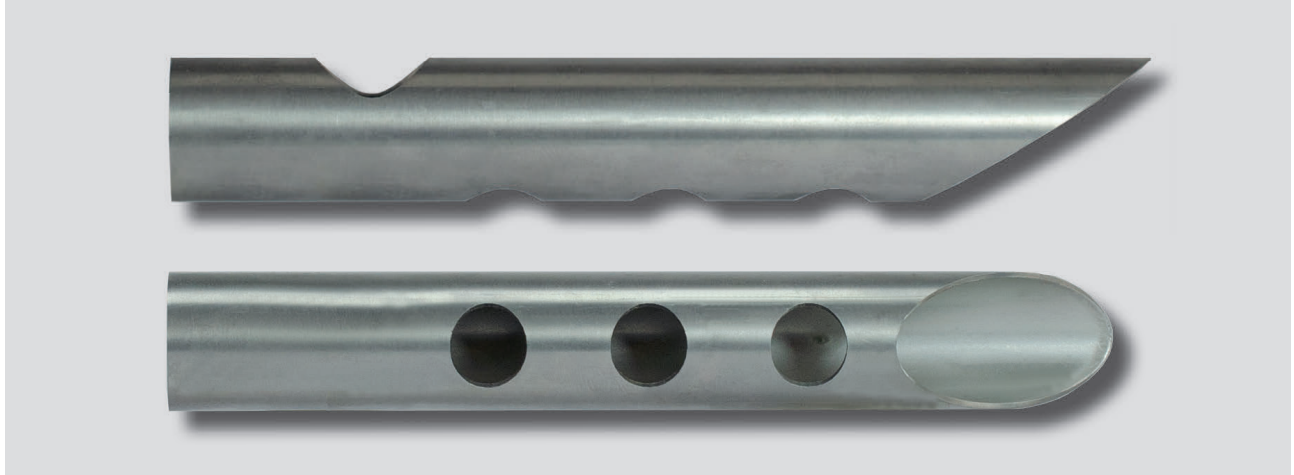
Dimensional drawing of KS2DNO_x Combination Probe

Order information

Designation/type	Order no.
KS2DNO _x Combination Probe with calibrating gas connection and IP65 junction box, including seal and mounting material	640R0010
NT1 NO _x Transmitter	657R61/62/64
GED ECO measuring Gas Extraction Device	655R152X/3X/4X/5X
GED FLEX installation options	see GED FLEX accessories
GED BASE measuring Gas Extraction Device	655R142X
GED BASE installation options	see GED BASE accessories

GED ECO.

Technical data

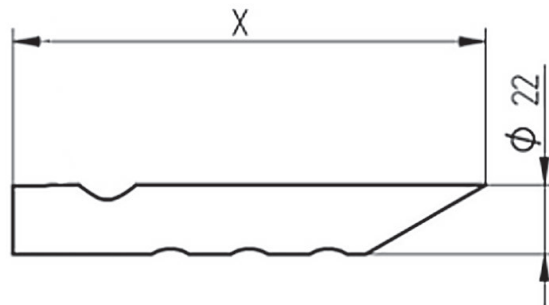


GED ECO

Item number	655R1001 length X = 150 mm 655R1002 length X = 300 mm 655R1003 length X = 450 mm	Dimensions [mm]	see dimensional drawings
Temperature	Flue gas up to 300 °C	Material	Stainless steel 1.4571/1.4404
Dust exposure	<100 mg/m ³	Weight [kg]	0.065 kg - 150 mm length 0.140 kg - 350 mm length 0.215 kg - 450 mm length
Flow velocity	< 100 °C: 1 ... 6 m/s > 100 °C: 1 ... 12 m/s	Use	In combination with KS1D ECO or LS2 ECO

Order information

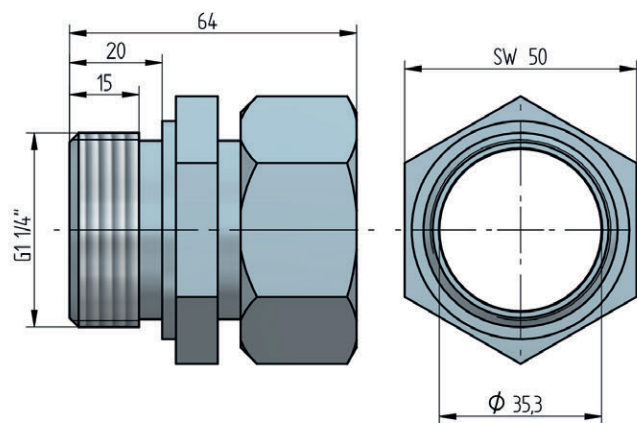
Designation/type	Order no.
Measuring Gas Extraction Device (GED ECO) length X = 150 mm	655R1001
Measuring Gas Extraction Device (GED ECO) length X = 300 mm	655R1002
Measuring Gas Extraction Device (GED ECO) length X = 450 mm	655R1003
Clamping ring for GED ECO	655R1021
Probe installation fitting (PIF) for LS2/KS1/KS1D probe, threaded connection 1 1/4" material: Steel	655R1010
Probe installation fitting (PIF) for LS2/KS1/KS1D probe, threaded connection 1 1/4" material: Stainless steel 1.4571	655R1016
Half collar R1 1/4" DIN 2986 steel, suitable for 655R1010	655R1012
Half collar R1 1/4" DIN 2986 stainless steel 1.4571, suitable for 655R1016	655R1015
Assembly paste (pack of 5)	650R1090



Dimensional drawing of GED ECO Gas Extraction Device



Probe installation fitting (PIF) 1 1/4 inch



Dimensional drawing of probe installation fitting (PIF) 1 1/4 inch



Clamping ring for GED ECO

GED BASE.

Technical data

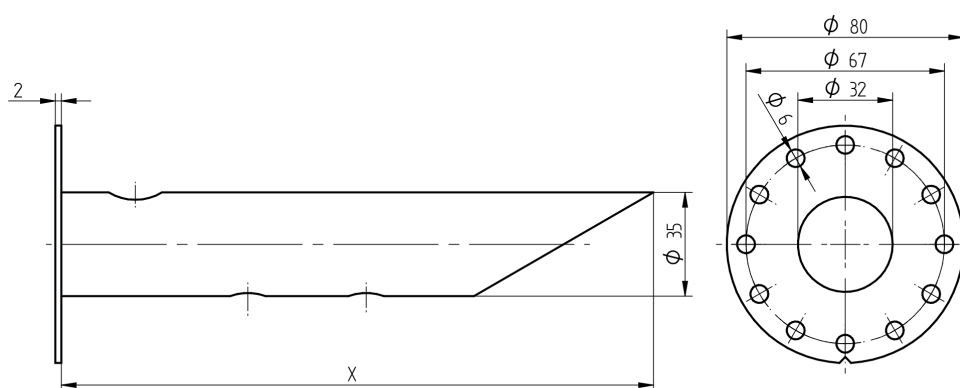


GED BASE measuring Gas Extraction Device

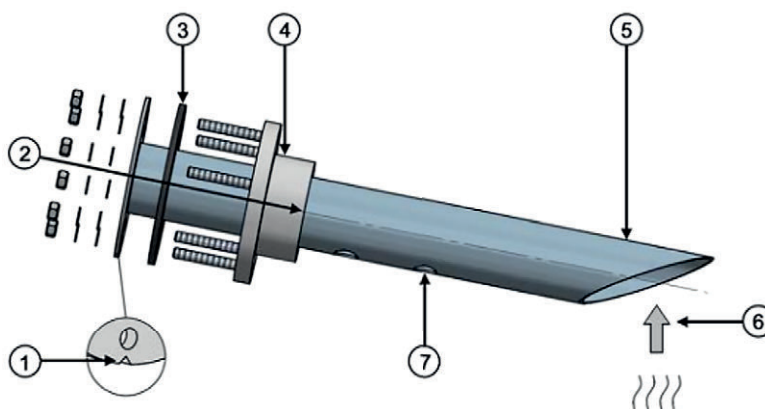
Item number	655R1420 length X = 200 mm 655R1421 length X = 350 mm 655R1422 length X = 500 mm	Dimensions [mm]	see dimensional drawings
Temperature	Flue gas up to 550 °C	Material	Stainless steel 1.4571/1.4404
Dust exposure	<200 mg/m ³	Weight [kg]	0.30 kg - 200 mm length 0.46 kg - 350 mm length 0.65 kg - 500 mm length
Flow velocity	< 100 °C: 1 ... 10 m/s > 100 °C: 1 ... 20 m/s	Use	In combination with LS2-BF, KS1D-BF or KS2DNO _x

Order information

Designation/type	Order no.
Measuring Gas Extraction Device length X = 200 mm	655R1420
Measuring Gas Extraction Device length X = 350 mm	655R1421
Measuring Gas Extraction Device length X = 500 mm	655R1422
Option 1: Counter flange for welding on, stainless steel 1.4571/1.4404	655R1450
Option 2: Assembly flange DN65 PN6	655R1451
Flange DN65 PN6 with DN 80 bore (when using assembly flange 655R1451)	655R0179
Material St37-2, cathodic dip coating	655R0180
Material 1.4571 stainless steel	655R0180



Dimensional drawing of GED BASE measuring Gas Extraction Device



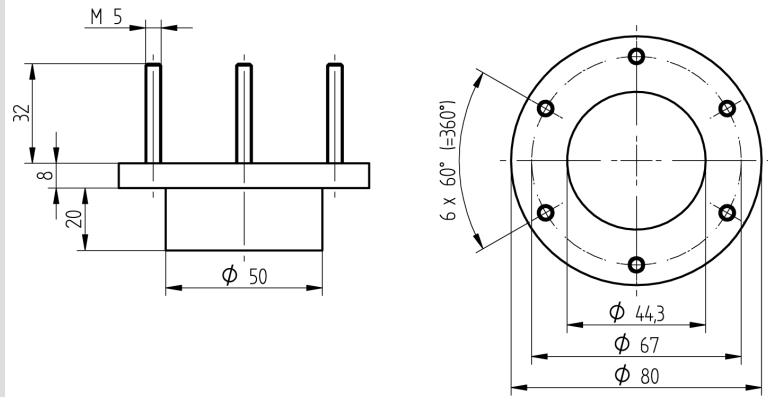
Schematic diagram of GED BASE type measuring Gas Extraction Device 655R1420...22

- 1 Groove as indication for direction of flow during assembly
- 2 Measuring gas outlet
- 3 Graphite seal
- 4 Counter flange
- 5 GED Base Gas Extraction Device length X = 150 mm
GED Base Gas Extraction Device length X = 350 mm
GED Base Gas Extraction Device length X = 450mm
- 6 Direction of flow
- 7 Measuring gas inlet openings

GED BASE.



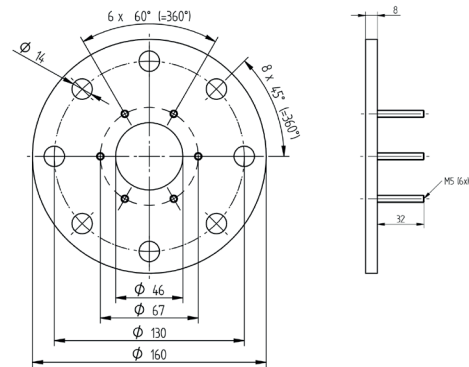
GED BASE counter flange type 655R1450



Dimensional drawing of GED BASE counter flange type 655R1450



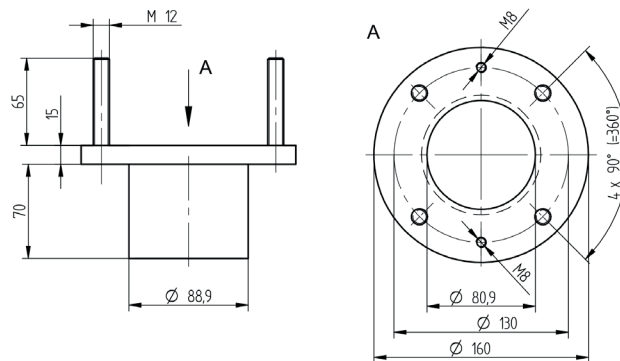
DN65 PN6 GED BASE assembly flange type 655R1451



Dimensional drawing of DN65 PN6 GED BASE assembly flange type 655R1451



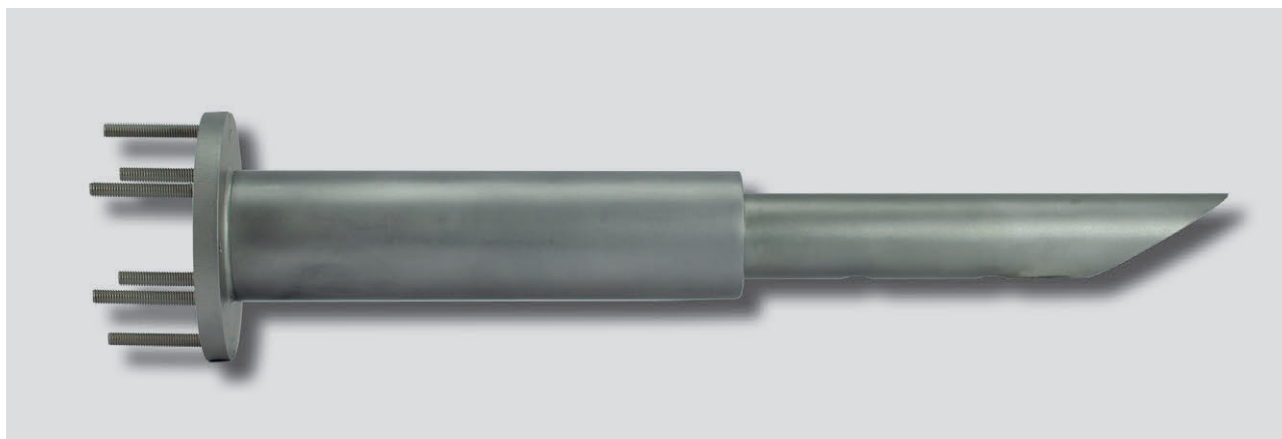
Assembly flange type 655R0179/80



Dimensional drawing of assembly flange type 655R0179/80

GED FLEX.

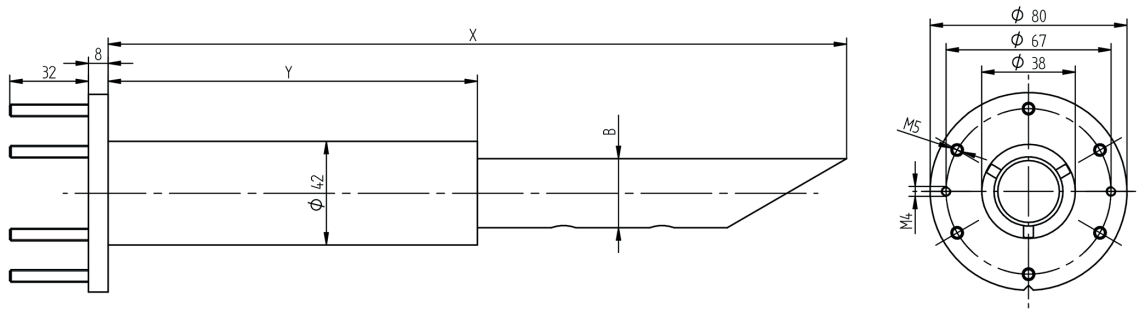
Technical data



GED ECO measuring Gas Extraction Device

Item number	655R1520 length X = 500 mm 655R1521 length X = 1000 mm 655R1522 length X = 1500 mm 655R1523 length X = 2000 mm	Dimensions [mm]	see dimensional drawings
Temperature	Flue gases up to 750 °C	Material	Stainless steel 1.4571/1.4404
Dust exposure	≤ 1000 mg/Nm ³ (with T-adapter for purging)	Weight [kg]	1.9 kg - 500 mm length 3.16 kg - 1000 mm length 4.62 kg - 1500 mm length 5.68 kg - 2000 mm length
Flow velocity	0.1 ... 40 m/s (depending on T-adapter) at measuring gas speeds ≥ 30 m/s selection GED FLEX less than 1000 mm	Use	In combination with LS2-BF, KS1D-BF, LS2-Ex, KS1D-Ex, or KS2DNO _x

Item number	655R1530 length X = 500 mm 655R1531 length X = 1000 mm 655R1532 length X = 1500 mm 655R1533 length X = 2000 mm	Dimensions [mm]	see dimensional drawings
Temperature	Flue gas up to 950 °C	Material	Inconel
Dust exposure	≤ 1000 mg/Nm ³ (with T-adapter for purging)	Weight [kg]	1.44 kg - 500 mm length 2.7 kg - 1000 mm length 4.32 kg - 1500 mm length 5.25 kg - 2000 mm length
Flow velocity	0.1 ... 40 m/s (depending on T-adapter) at measuring gas speeds ≥ 30 m/s selection GED FLEX less than 1000 mm	Use	In combination with LS2-BF, KS1D-BF, LS2-Ex, KS1D-Ex, or KS2DNO _x



Dimensional drawing of GED FLEX stainless steel+Inconel

Total length X	Length of outer pipe Y	Diameter of inner pipe B	
		Stainless steel	Inconel
500 mm	250 mm	28 mm	26.7 mm
1,000 mm	500 mm	28 mm	26.7 mm
1,500 mm	750 mm	28 mm	26.7 mm
2,000 mm	1,000 mm	28 mm	26.7 mm

GED FLEX.

Technical data



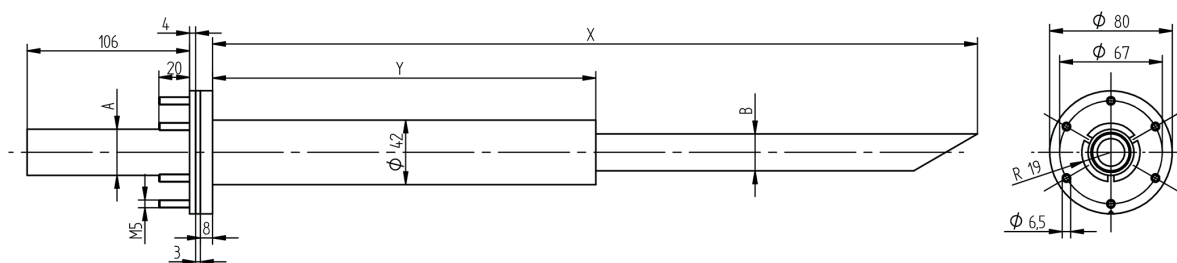
GED ECO measuring Gas Extraction Device Kanthal + AL203

Item number	655R1541 length X = 1000 mm 655R1542 length X = 1500 mm 655R1543 length X = 2000 mm	Dimensions [mm]	see dimensional drawings
Temperature	Flue gas up to 1200 °C	Material	Kanthal
Dust exposure	≤ 1000 mg/Nm ³ (with T-adapter for purging)	Weight [kg]	3.16 kg - 1000 mm length 4.62 kg - 1500 mm length 5.68 kg - 2000 mm length
Flow velocity	0.1 ... 40 m/s (depending on T-adapter) at measuring gas speeds ≥ 30 m/s selection GED FLEX less than 1000 mm	Use	In combination with LS2-BF, KS1D-BF, LS2-Ex, KS1D-Ex, or KS2DNO _x

Item number	655R1551 length X = 1000 mm 655R1552 length X = 1500 mm	Dimensions [mm]	see dimensional drawings (Identical to Kanthal)
Temperature	Flue gases up to 1400 °C	Material	Al ₂ O ₃
Dust exposure	≤ 1000 mg/Nm ³ (with T-adapter for purging)	Weight [kg]	2.6 kg - 1000 mm length 3.47 kg - 1500 mm length
Flow velocity	0.1 ... 40 m/s (depending on T-adapter) at measuring gas speeds ≥ 30 m/s selection GED FLEX less than 1000 mm	Use	In combination with LS2-BF, KS1D-BF, LS2-Ex, KS1D-Ex, or KS2DNO _x

Order information

Designation/type	Order no.
GED FLEX made of stainless steel 1.4571/1.4404 for temperatures up to 750 °C	
GED FLEX length X = 500 mm	655R1520
GED FLEX length X = 1000 mm	655R1521
GED FLEX length X = 1500 mm	655R1522
GED FLEX length X = 2000 mm	655R1523
GED FLEX made of Inconel for temperatures up to 950 °C	
GED FLEX length X = 500 mm	655R1530
GED FLEX length X = 1000 mm	655R1531
GED FLEX length X = 1500 mm	655R1532
GED FLEX length X = 2000 mm	655R1533
GED FLEX made of Kanthal for temperatures up to 1200 °C	
GED FLEX length X = 1000 mm	655R1541
GED FLEX length X = 1500 mm	655R1542
GED FLEX length X = 2000 mm	655R1543
GED FLEX made of Al₂O₃ for temperatures up to 1400 °C	
GED FLEX length X = 1000 mm	655R1551
GED FLEX length X = 1500 mm	655R1552



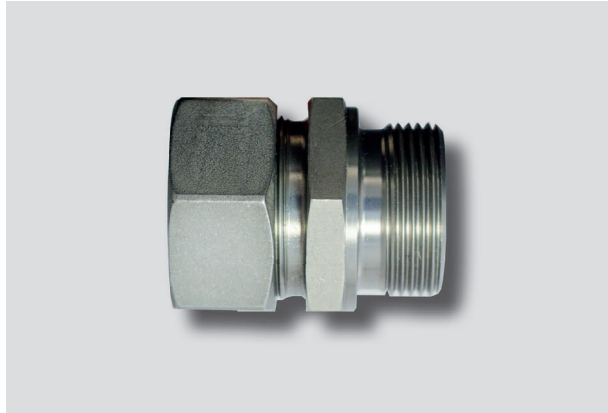
Dimensional drawing of GED FLEX Kanthal+Al₂O₃

Total length X	Length of outer pipe Y	Diameter of inner pipe A		Diameter of inner pipe B	
		Kanthal	AL203	Kanthal	AL203
500 mm	250 mm	30 mm	26.67 mm	26.67 mm	24 mm
1,000 mm	500 mm	30 mm	26.67 mm	26.67 mm	24 mm
1,500 mm	750 mm	30 mm	26.67 mm	26.67 mm	24 mm
2,000 mm	1,000 mm	30 mm	26.67 mm	26.67 mm	24 mm

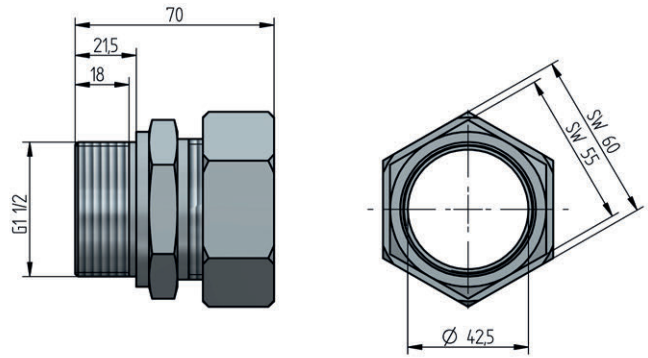
Accessories for GED FLEX measuring Gas Extraction Device

Designation/type	Order no.
Cutting ring fitting with G1 1/2" external thread, galvanized steel (suitable for 655R1512) Stainless steel 1.4571 (suitable for 655R1513)	655R1510 655R1511
Half collar G 1 1/2", DIN 2986 Steel (suitable for 655R1510) Stainless steel 1.4571 (suitable for 655R1511)	655R1512 655R1013
Cutting ring/Clamping ring SRD42 / SRD42VA Galvanized steel Stainless steel 1.4571	655R1508 655R1509
Weld-on connection Galvanized steel Stainless steel 1.4571	655R1514 655R1515
Mounting flange DN65PN6 for GED FLEX Galvanized steel Stainless steel 1.4571	655R1516 655R1517
Counter flange DN65 PN6, inner pipe diameter 80 mm, pipe length 70 mm, steel, cathodic dip coating, black	655R0179
Counter flange DN65 PN6, inner pipe diameter 80 mm, special length up to 500 mm, steel, cathodic dip coating	655R0179/S
Counter flange DN65 PN6, inner pipe diameter 80 mm, pipe length 70 mm, stainless steel 1.4571	655R0180
Counter flange DN65 PN6, inner pipe diameter 80 mm, special length up to 500 mm, stainless steel 1.4571 inner pipe extension	655R0180/S
Stainless steel for use of a T-adapters for GED FLEX 655R152X	655R1574
Inconel for use of a T-adapters for GED FLEX 655R153X	655R1575
T-adapter with blind flange, stainless steel 1.4571/1.4404	655R1565
T-adapter for purge operation, stainless steel 1.4571/1.4404, hose connection 12/10 mm	655R1566
T-adapter for injector acceleration, stainless steel 1.4571/1.4404, hose connection 6/4 mm	655R1567
T-adapter for injector acceleration and purge operation, stainless steel 1.4571/1.4404	655R1568
T-adapter outer insulation, 0.73 kg, 260 °C glass fibre material	656R1112
T-adapter with blind flange heated, 230 VAC/140 W, 220 °C	655R1570
T-adapter for purge operation heated, 230 VAC/140 W, 220 °C	655R1571
T-adapter for injector acceleration heated, 230 VAC/140 W, 220 °C	655R1572
T-adapter for injector acceleration and purge operation heated*, 230 VAC/140 W, 220 °C	655R1573

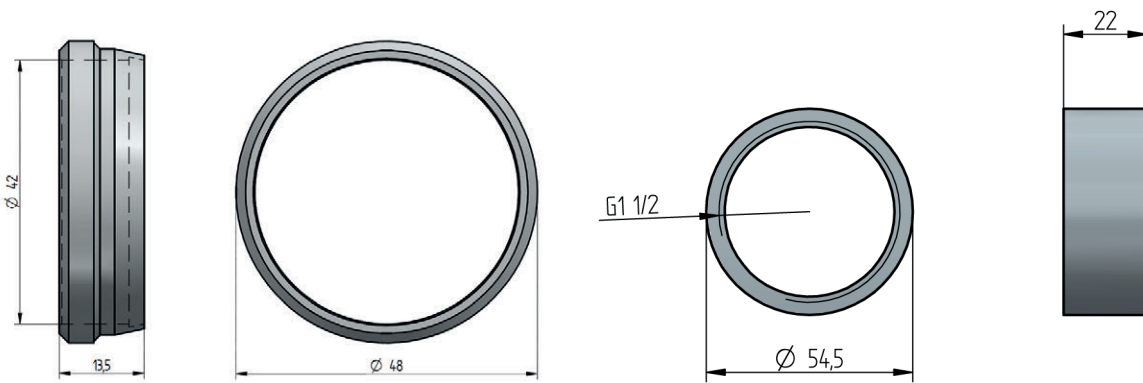
* Combined blow-out/purge air unit for purge operation must be ordered separately, order no. 657R0934



Cutting ring fitting with G1 1/2" external thread

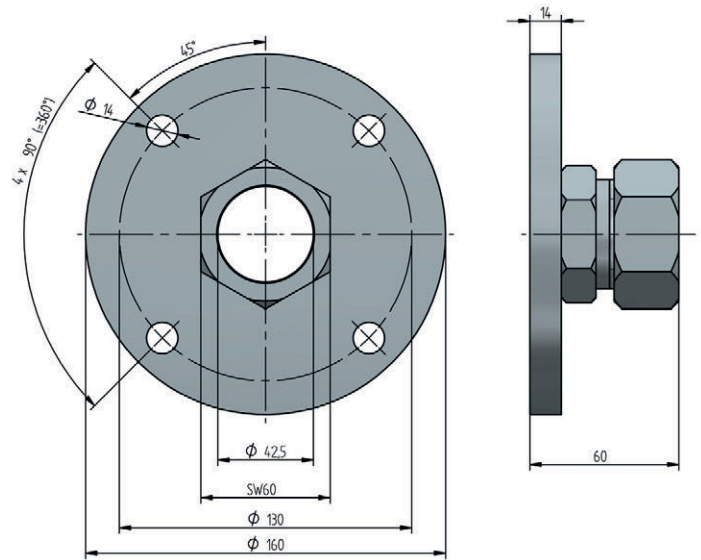


Dimensional drawing of cutting ring fitting with G1 1/2" external thread

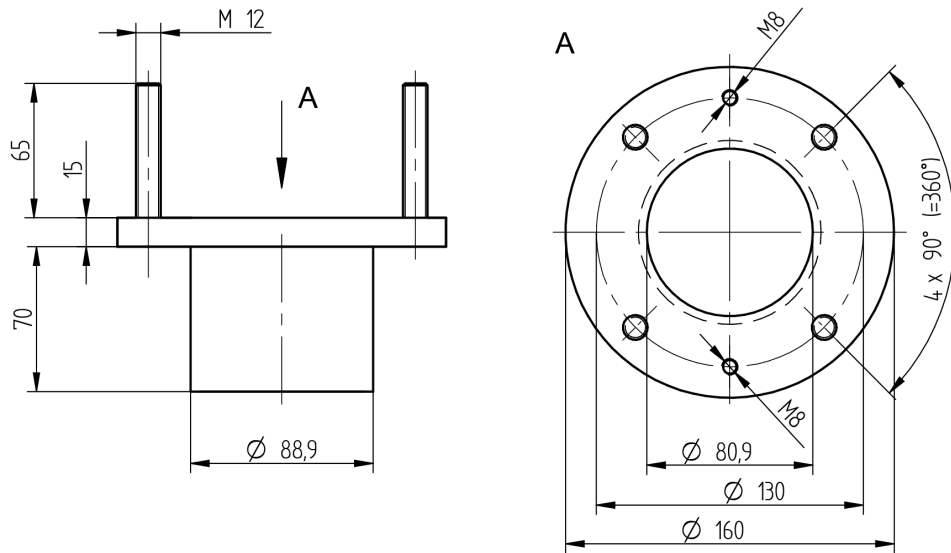


Dimensional drawing for cutting ring for GED FLEX

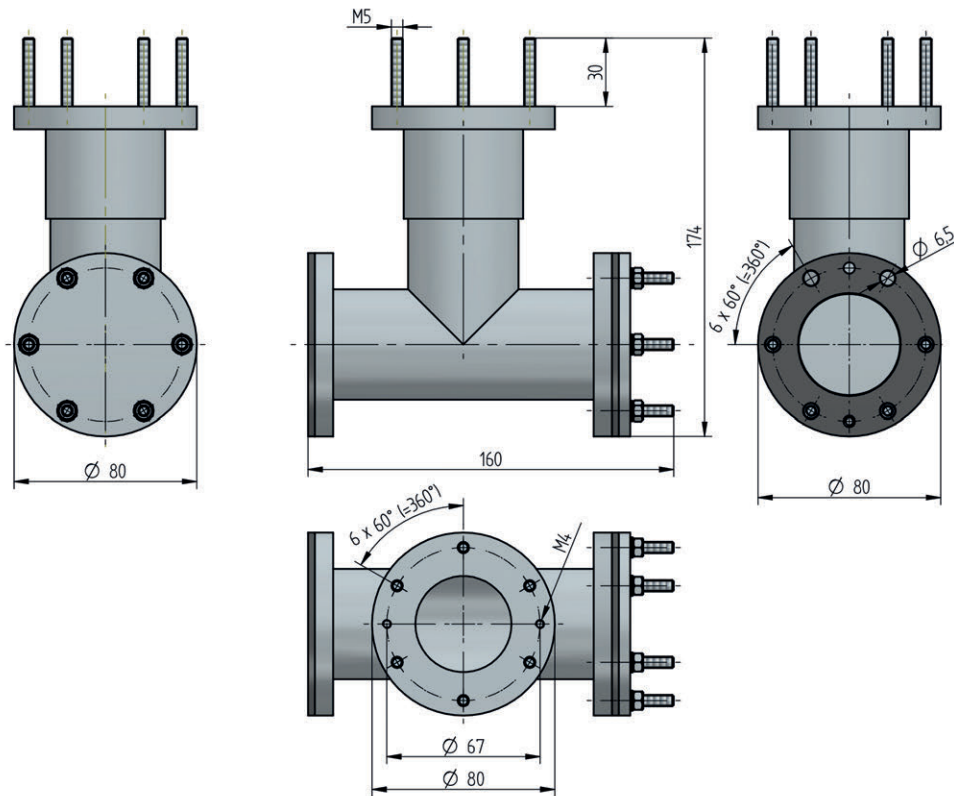
Dimensional drawing of half collar for welding on with G1 inner thread



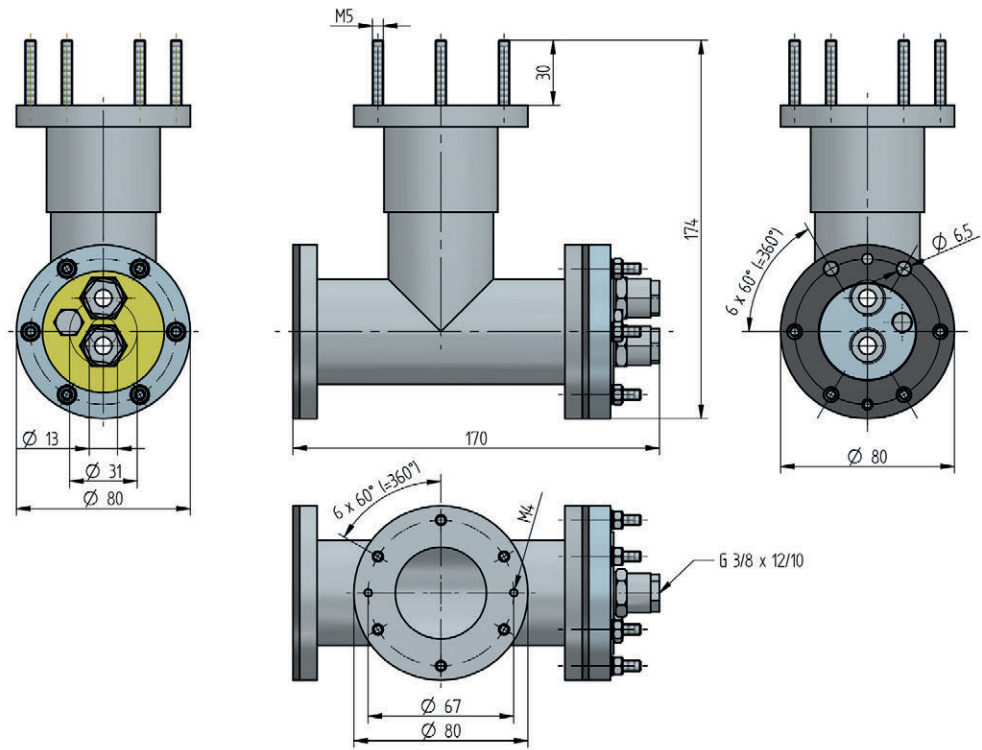
Dimensional drawing of mounting flange DN65 PN6



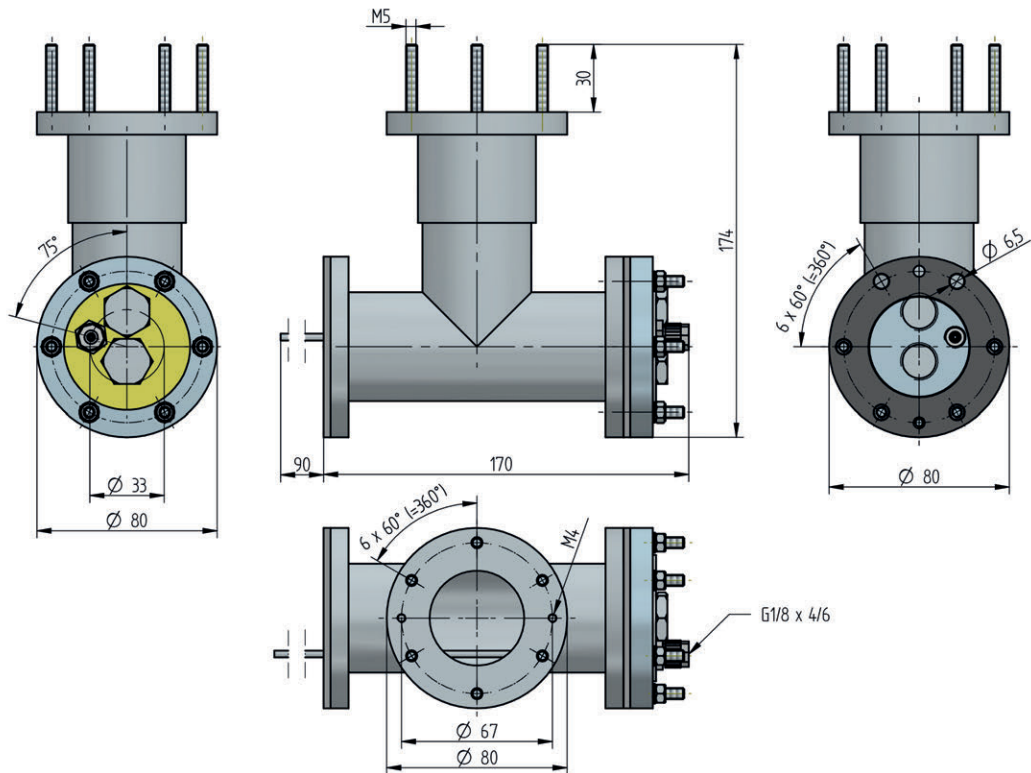
Dimensional drawing of mounting flange DN65 PN6



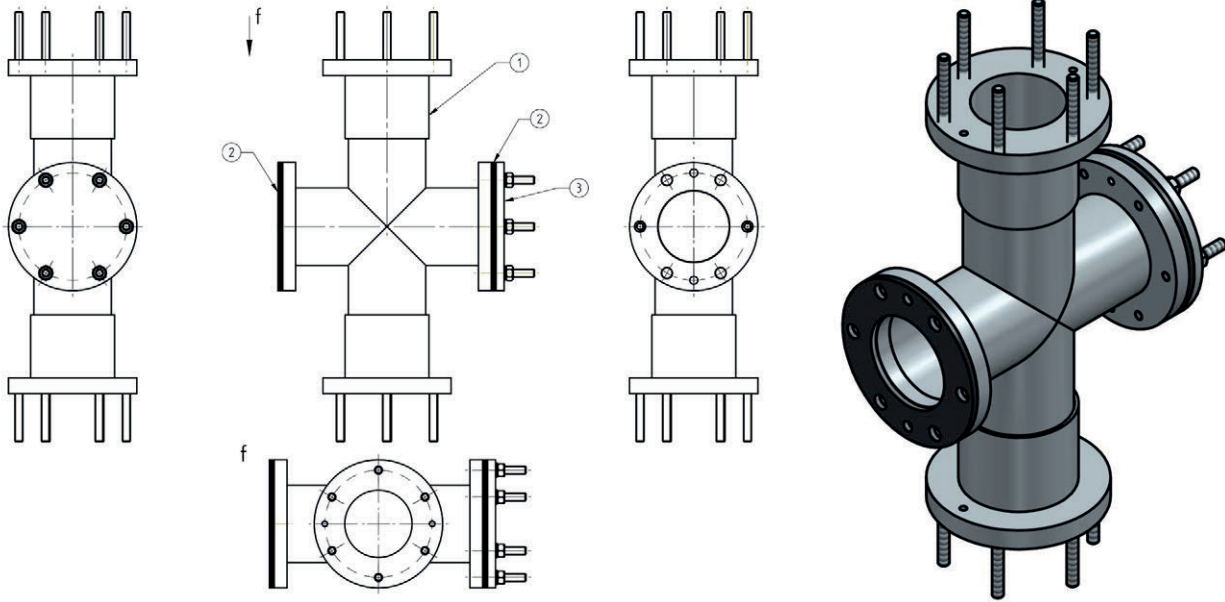
Dimensional drawing of standard T-adaptor 655R1565



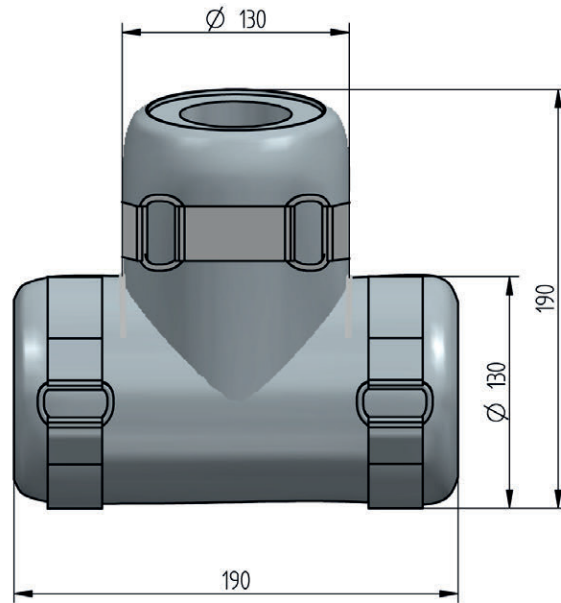
Dimensional drawing of T-adapter for probe mount for purge operation inner/outer



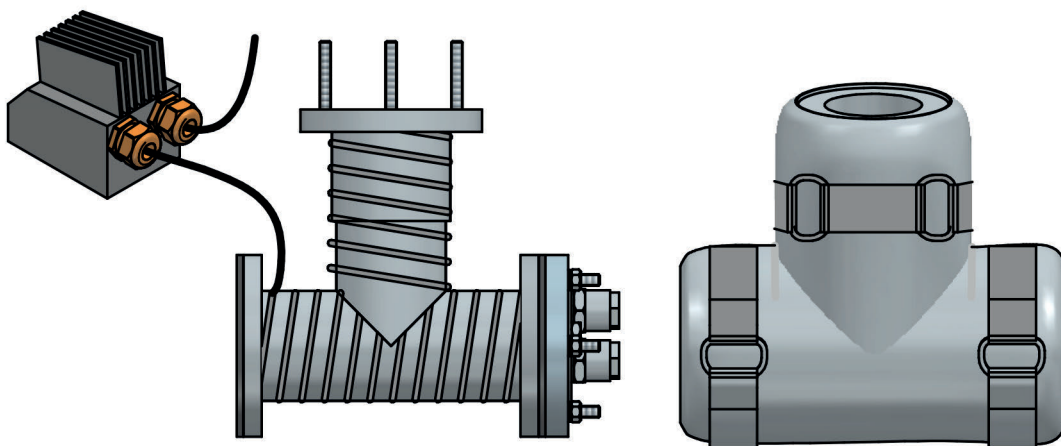
Dimensional drawing of T-adapter for probe mount for ejector switch-off 656R1111



Cross adapter



Dimensional drawing of T-adapter outer insulation



T-adapter heated with outer insulation for purging

Fully automatic calibration system for LS2-/KS1D-BF, -EX, KAF and KS2DNO_x probe with LT2 or NT1.

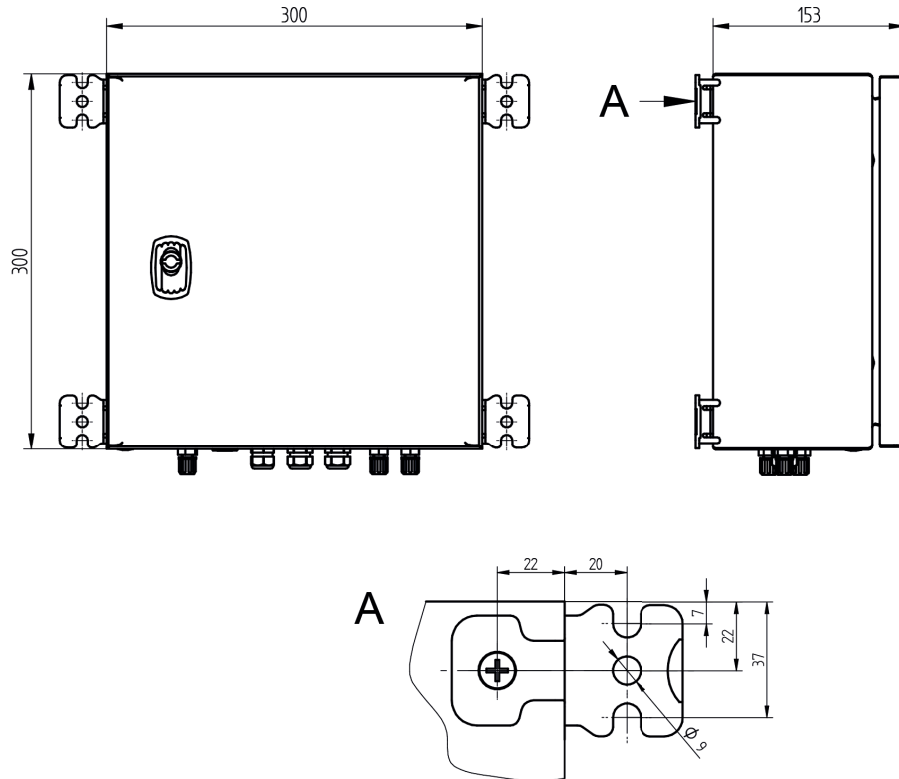
Technical data



Fully automatic calibration system for LS2-/KS1D-BF, -EX, KAF and KS2DNO_x probe with LT2 or NT1.

Possible applications	For calibration of LS2-/KS1D-BF, -EX, KAF and KS2DNO _x probe in combination with LT2 or NT1	Dimensions [mm]	see dimensional drawing
Power supply	24 VDC from LT2 relay module	Material	Sheet steel powder-coated
Power consumption	Max. 33 VA short-term 45 VA (when switching the solenoid valves)	Weight [kg]	6.3
Pneumatic supply	Test gas O ₂ calibration 3 % by vol. O ₂ , rest N ₂ pre pressure 0.3 bar Test gas CO _e calibration 3 % by vol. O ₂ , 200 ppm CO, 100 ppm H ₂ rest N ₂ pre pressure 0.3 bar instrument air offset calibration class 1 or 2 acc. to ISO8573.1 pre pressure 0.3 bar	Colour	RAL 7035 light grey
		Protection class	IP66
		Operating temperature	-5 ... +60 °C

Fully automatic calibration system for KS1D-BF with LT2.



Dimensional drawing for calibration system for KS1D-BF with LT2

Order information

Designation/type	Order no.
Fully automatic calibration system for LS2-/KS1D-BF, -EX, KAF and KS2DNO _x probe with LT2	657R0940

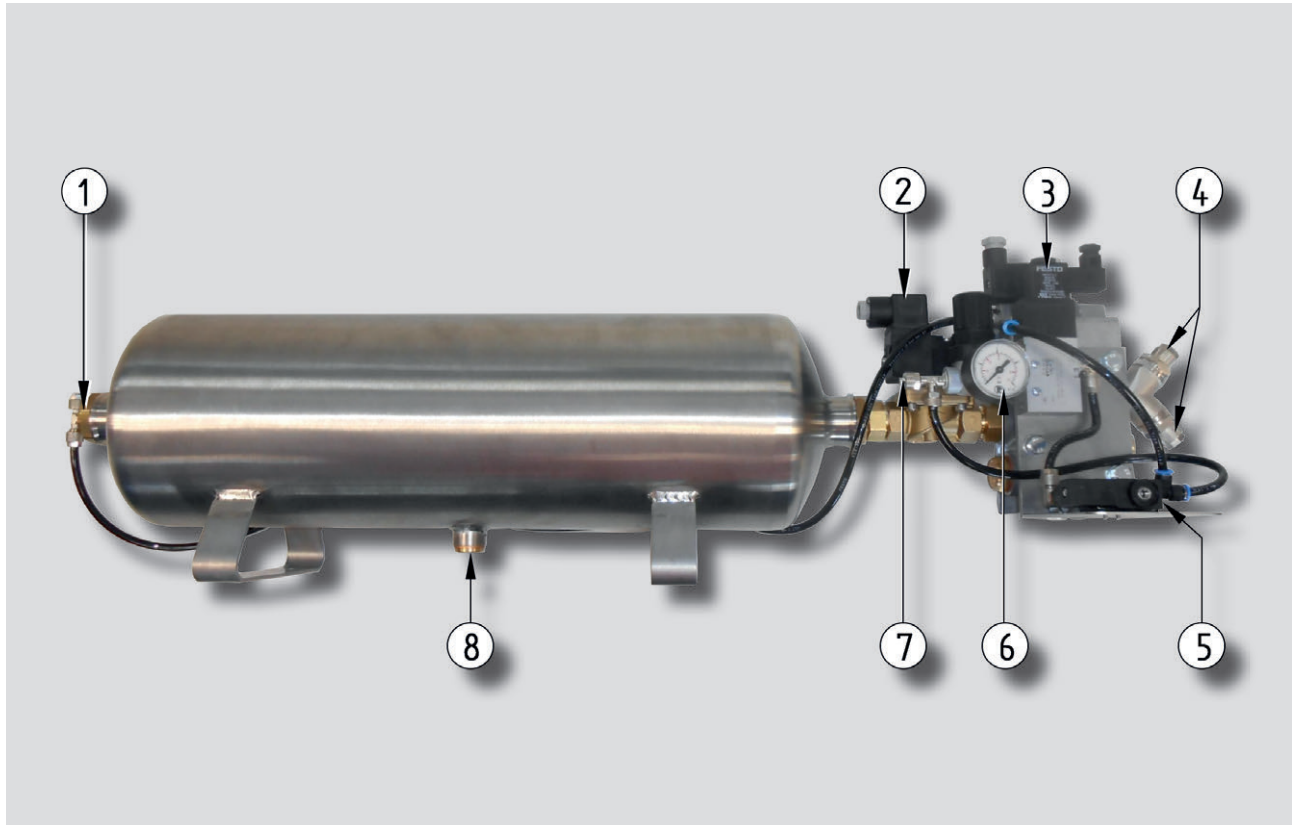
Accessories

Designation/type	Order no.
Hose PTFE 6/4 mm, colour: natural - per meter	650P0707

Spare parts

Designation/type	Order no.
Flow meter 6-60 NI/h, with NAMUR limit value notification, for probe connection unit of Ex-probes	657R0070
3/2 solenoid valve 31JBMWOB12-LBA05024CS 24 VDC directly controlled	657P0862
Connection M5-6 QSM-M5-6	657P0530
L-connection M5-6 QSML-M5-6	657P0529
Hose PUN 6/4 mm, black	657P0547
Test and calibrating gas bottle B (disposable aluminium bottle with test gas B: 3 % by vol. O ₂ , rest N ₂)	650R1022
Test and calibrating gas bottle C (disposable aluminium bottle with test gas C: 3 % by vol. O ₂ , 300 ppm CO _e *, rest N ₂)	650R1021
Test and calibrating gas bottle D (disposable aluminium bottle with test gas D: 25 ppm NO**, rest N ₂)	650R1024
Test and calibrating gas bottle E (disposable aluminium bottle with test gas E: 100 ppm NO**, rest N ₂)	650R1026

Purge unit for GED FLEX.



Purge unit for GED FLEX

- 1 Compressed air input for purging GED (min. 6 bar)
- 2 Solenoid valve for purging probe
- 3 Solenoid valve for purging GED
- 4 Compressed air outlets for purging GED
- 5 Compressed air output for purging probe
- 6 Pressure for purge air to probe
- 7 Compressed air input for purging probe (min. 3 bar)
- 8 Condensate drain plug valve

Order information

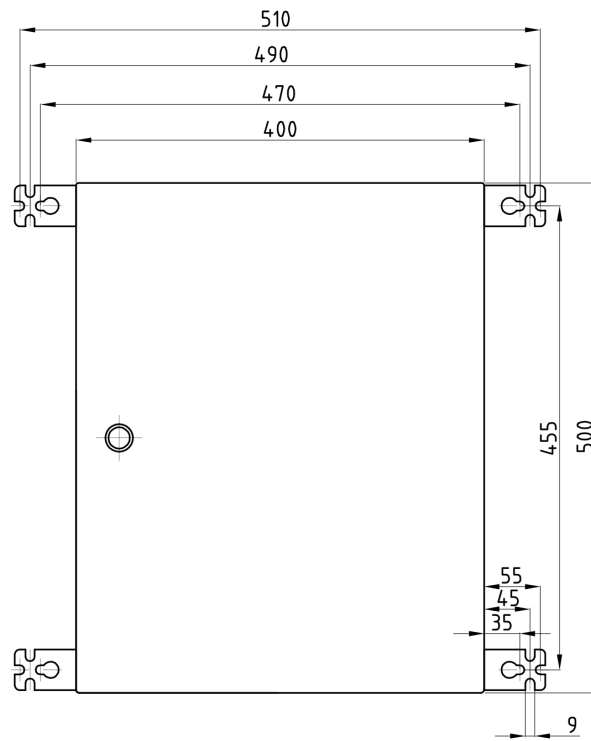
Designation/type	Order no.
Dedusting / Purge unit, IP65, for GED FLEX T-adapter	657R0934



Purge unit for LS2/KS1D-KAF probes

Possible applications	Use to blow out the probe pre-filter from the inside out with compressed air in flue gases with a high dust content	Dimensions [mm]	see dimensional drawing
Power supply	24 VDC external, alternatively 24 VDC from relay module LT2	Material	Sheet steel powder-coated
Power consumption	Approx. 25 W, for purge time	Weight [kg]	10
Pneumatic supply	Oil/Water-free compressed air or instrument air (class 1 or 2 according to ISO 8573.1) pre pressure min. 5 bar	Colour	RAL 7035 light grey
Operating temperature	-20 °C ... +60 °C	Protection class	IP65

Purge unit for LS2/KS1D-KAF probes.



Dimensional drawing of purge unit for LS2KS1D-KAF probes

Order information

Designation/type	Order no.
Purge unit for LS2/KS1D-KAF probes	650R2080

LT2 Lambda Transmitter.

Technical data

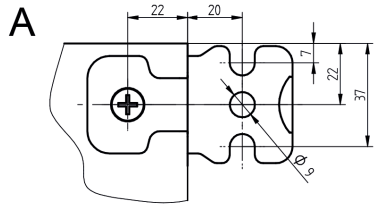
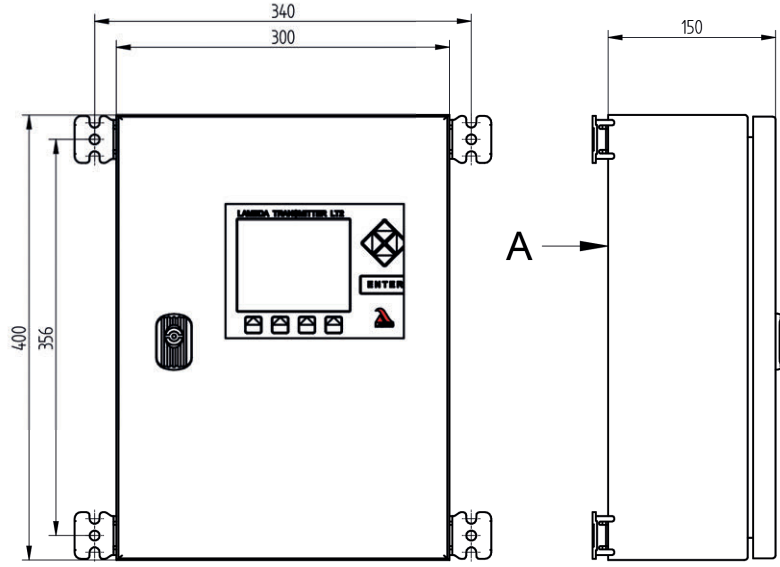


LT2 in wall mounting housing

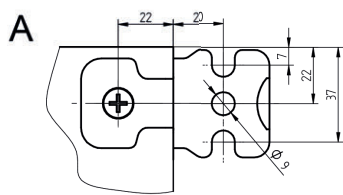
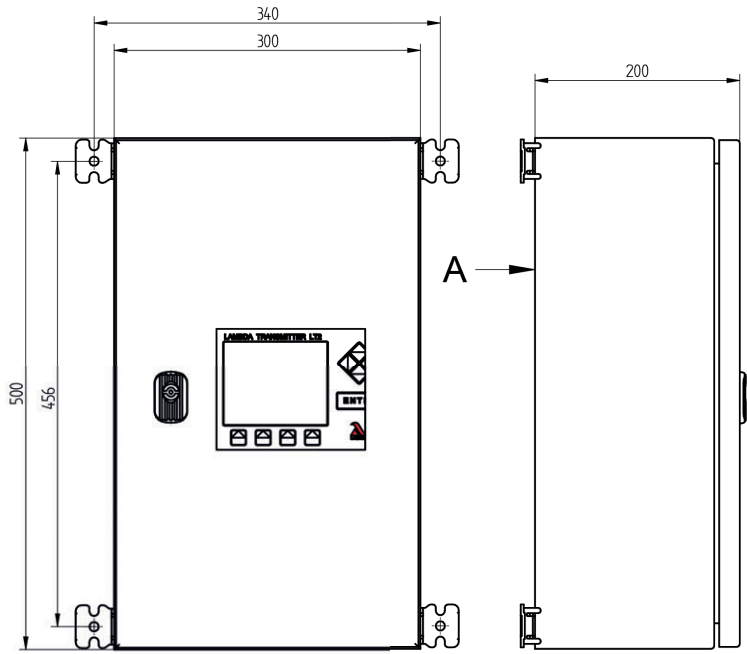
LT2 in wall mounting housing with reference air pump

Possible applications	Measurement and detection of O ₂ concentration and oxidizing gas constituents CO _e (CO/H ₂) in flue gases from combustion systems	Communication	Transmission of measurement values, warning and fault messages, receipt of commands
Range of measuring measurement accuracy	O ₂ : 0.1 % by vol. O ₂ in range 0 ... 18 % by vol. O ₂ CO: 1 ppm in CO range	Control elements	Control of purging and calibrating unit with LCD graphic display (optional) LSB Remote Software (optional)
Power supply	230 VAC and 115 VAC	Dimensions [mm]	see dimensional drawing
Power consumption	Max. 50 VA short-term 150 VA (probe heating phase)	Material	Sheet steel powder-coated
Display	LCD graphic display 100 x 80 mm	Weight [kg]	10 standard 13 reference air pump
Interface	Direct communication with LAMTEC burner control systems via (LSB) and Field bus connection to PROFIBUS DP	Colour	RAL 7035 light grey
		Protection class	According to DIN 40050 IP66
Connectable probes	All LS2 and KS1D probe types	Approval	SIL 1 in corresponding variant in combination with KS1D

LT2 Lambda Transmitter.



Dimensional drawing for LT2 housing with display



Dimensional drawing of LT2 in wall mounting housing with reference air pump

Order information

Designation/type	Order no.
LT2 Lambda Transmitter in wall mounting housing	657R102 ...

A 03 - PROBE	Selection
Configured for KS1D1 Combination Probe (O ₂ measurement and CO detection)	KS1D
Configured for LS2 Lambda Probe (O ₂ measurement)	LS2R*

* The analogue outputs for the KS1D combination sensor can only be supplied in a floating design.

A 06 - type	Selection
Standard	1S*
For probe with GED FLEX and purge unit internally fitted R0017 relay module (attribute 39, selection 30) is required	3A
For "KAF - semi-automatic calibration and purge" probe type Internally fitted pressure sensor card (analogue input 1 A27 and analogue input 2 A30) and internally fitted relay module R0017 (attribute 39, selection 30) is required, selection is not required, as it is set automatically by the system.	4KA
For "hazardous area 1" type probes	7EX1
For "hazardous area 2" type probes	8EX2
For "HT - ejector removal" probe type internally fitted R0017 relay module (attribute 39, selection 30) is required	9E

A 09 - Display	Selection
With display and operating unit (wall mounting housing with window)	a1
With display and operating unit for external operation	a4

A 12 - pressure sensor	Selection
Selection not required, is automatically set by system	

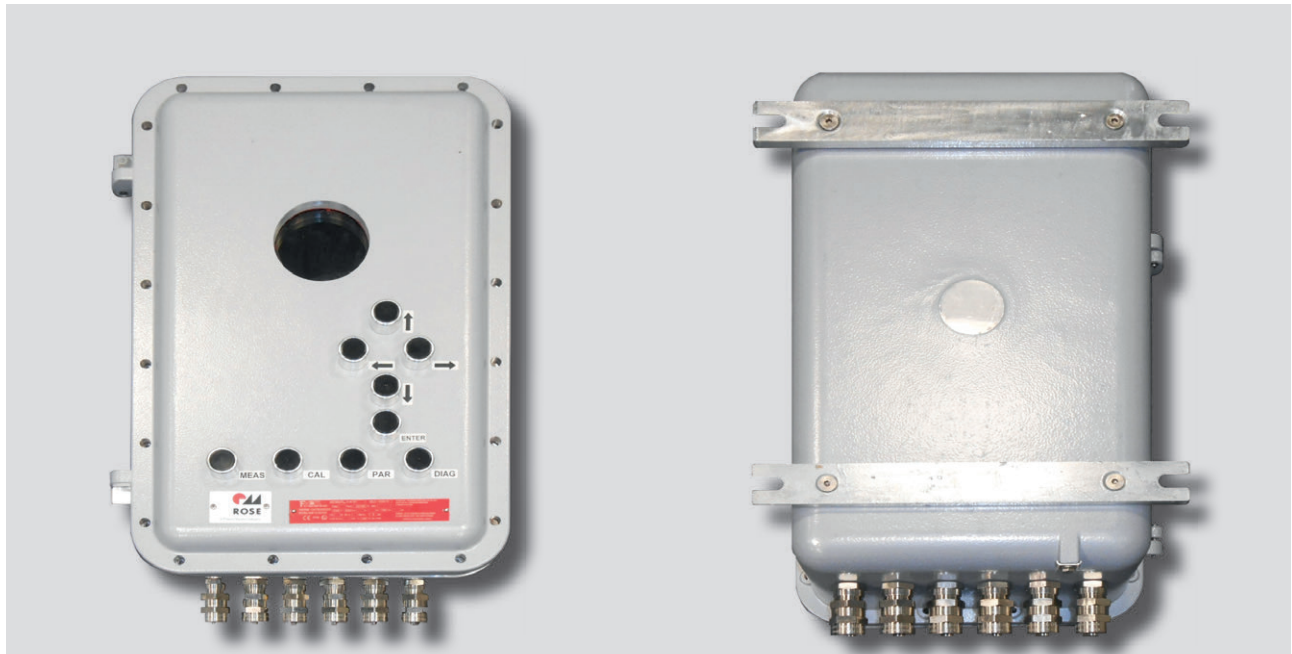
A 15/18/21/24 - analogue output 1/2/3/4	Selection output 1	Selection output 2	Selection output 3	Selection output 4
Without analogue output	Not possible	c20*	c30*	c40*
Analogue output current 4 ... 20 mA	c11*	c21	c31	c41
Analogue output current 0 ... 20 mA	c12	c22	c32	c42
Analogue output voltage 0 ... 10 V	c13	c23	c33	c43
Analogue output current 4 ... 20 mA flowing	c14	c24	c34	c44
Analogue output current 4 ... 20 mA flowing REG required in connection with O ₂ control via analogue input on FMS/VMS (0 ... 25 % by vol. O ₂ -> 4 ... 20mA)	c15	c25	c35	c45
Analogue output current 0 ... 20 mA flowing	c16	c26	c36	c46
Analogue output voltage 0 ... 10 V flowing	c17	c27	c37	c47

A 27 - 27/30/33/36 - analogue input 1/2/3/4	Selection
Selection not required, is automatically set by system	

A 39 - relay module, limit values, O₂ controller, firing rate	Selection
657R0857 relay module R0017	e30
A 45 - power supply voltage	Selection
230VAC	g1
115VAC	g2
A 48 - reference air pump	Selection
WITHOUT	i0
657R1060 230 VAC	i1
657R1060 230 VAC in stainless steel housing	i2
657R1060 115 VAC	i3
A 57 - calculations	Selection
Without	n0
657R0910 CO ₂	n1
A 60 - language setting	Selection
German/English	oD
German/French	oDF
English/German	oE
English/French	oEF
Do not use	oF
French/English	oFE
A 63 - special configuration	Selection
Without	z0
Sil1 functional safety	z11
Aa1 0...21 % by vol. O ₂	z21
Housing 1.4301 window 400x300x200, IP66	z4
Housing 1.4404 window 500x400x200, IP66	z5
4x Tui 23 galv. isolated in LT2k housing	z55
For installation in EEx housing with ext. operation	z63

EExd housing for LT2 Lambda Transmitter.

Technical data



EExd housing for LT2 for installation in a potentially explosive atmosphere

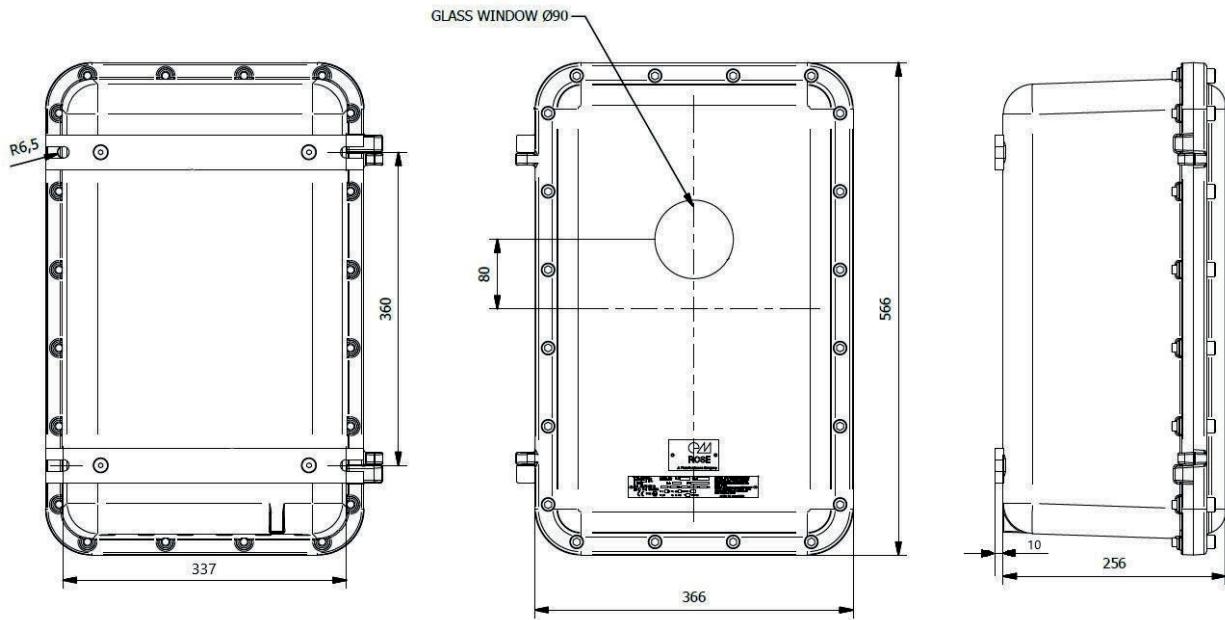
Back view of EExd housing

Possible applications	For EX zone 1 and 2	Dimensions [mm]	see dimensional drawing
		Material	Sheet steel powder-coated
Explosion protection	Marking in accordance with ATEX: II 2G Ex d IIB+H2 T5 Gb II 2D Ex tb IIIC T100°C Db Marking in accordance with IECEx: Ex II 2G Ex d IIB+H2 T5 Gb Ex II 2D Ex tb IIIC T100°C Db	Weight [kg]	Approx. 40
		Colour	RAL 7035 light grey
Operating temperature	-20 ... +60 °C	Protection class	According to DIN 40050 IP66

EExd housing for LT2 Lambda Transmitter.

Order information

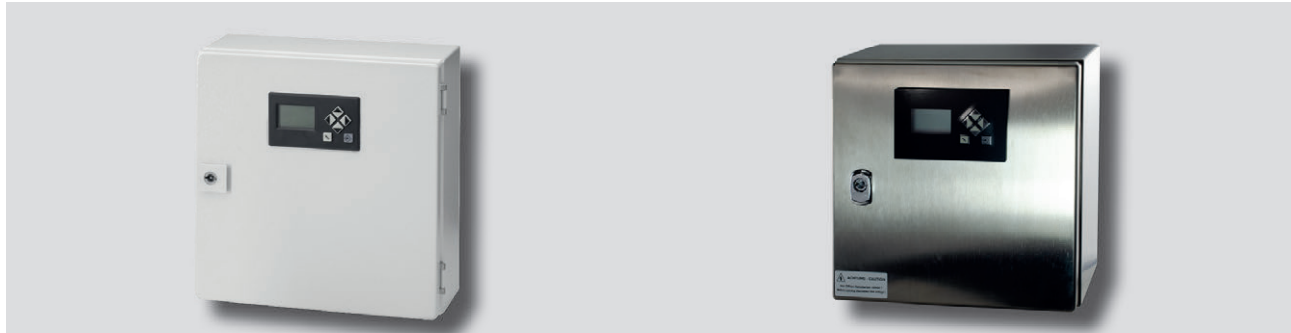
Designation/type	Order no.
Exd IIB housing with window 380 x 560 x 245 mm (W x H x D), hazardous area 1 and 2, with control buttons and main switch	657R0165BD



Dimensional drawing of EExd housing for LT2

LT3 Lambda Transmitter.

Technical data

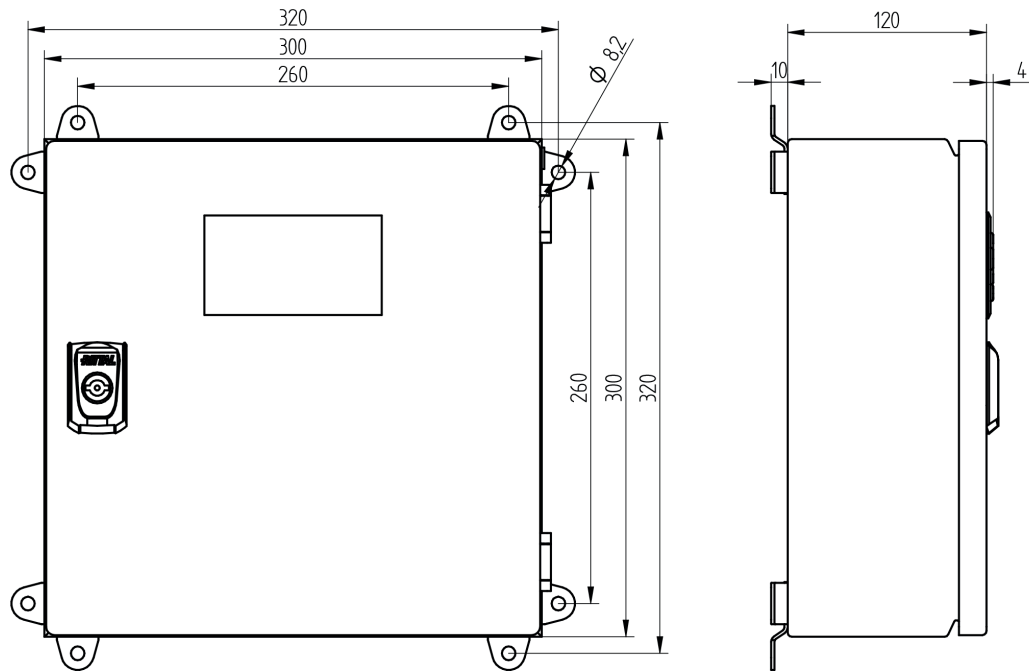


LT3 housing with UI300-LT-V2

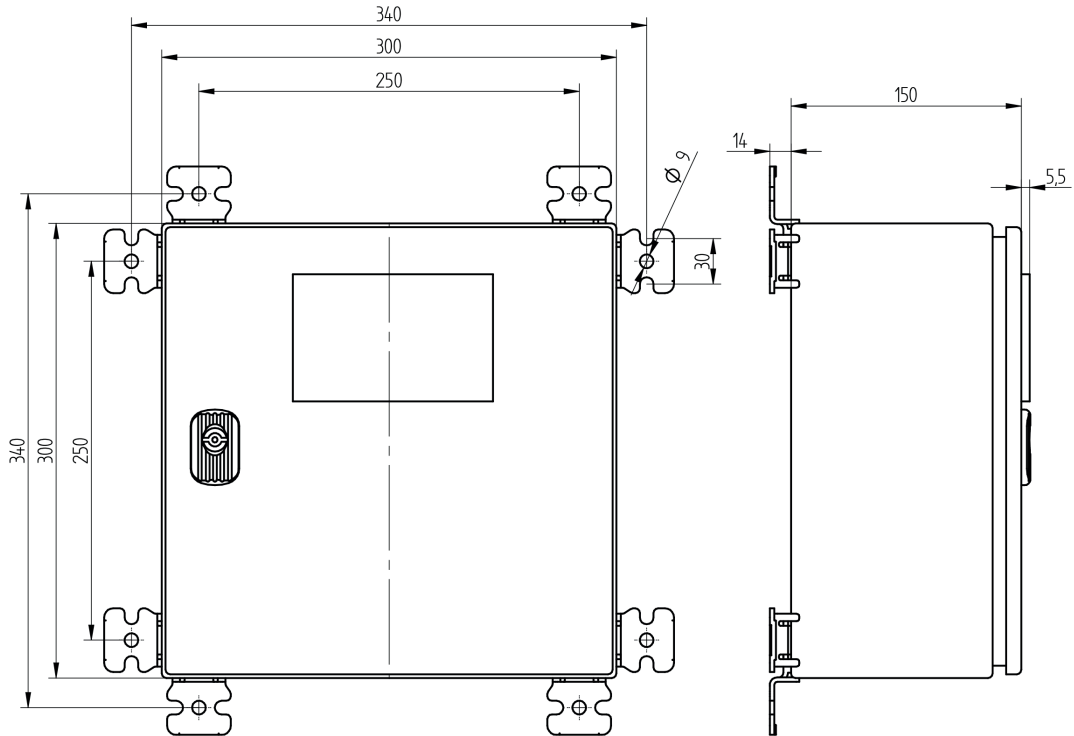
LT3 in stainless steel housing with UI300-LT-V2 and additional cover for IP65

Possible applications	Measurement and detection of O ₂ concentration and oxidizing gas constituents CO _e (CO/H ₂) in flue gases from combustion systems	Control elements	Display and operating unit with LCD graphic display (optional) LSB Remote Software (optional)
Supply voltage	120 VAC / -30 % ... 230 VAC / +10 %, 50 ... 60 Hz	Operating temperature range	-20 ... +60 °C
Power consumption	30 W, up to max. 69 W	Dimensions [mm]	see dimensional drawing
Measurement accuracy	O ₂ : 0.1 % by vol. O ₂ CO _e 1 ppm in CO range 0 ... 1.000 ppm	Material	Sheet steel, powder-coated Stainless steel 304L
		Weight [kg]	Approx. 6
Time until operational readiness	When the probe is commissioned for the first time, wait 60 minutes; otherwise, about 10 minutes after "mains on".	Colour	RAL 7035 light grey
		Protection class	IP54 IP65 with additional cover
Interface	Direct communication with LAMTEC burner control systems via (LSB) and Field bus connection to PROFIBUS DP	Connectable probes	LS2/KS1D ECO LS2/KS1D-BF LS2/KS1D-EX
Communication	Transmission of measurement values, warning and fault messages, receipt of commands	Approval	SIL 1 in corresponding variant in combination with KS1D SIL 2 as 1oo2 with 2 LT3 and 2 KS1D DIN EN 16340

LT3 Lambda Transmitter.



Dimensional drawing of LT3 housing for wall mounting with UI300-LT-V2



Dimensional drawing of LT3 in stainless steel housing

Order information

Designation/type	Order no.
LT3 Lambda Transmitter in wall mounting housing	657R51 ...
A 10 - DISPLAY	Selection
With user interface Ui300/LT3-V2/IP54	24
With user interface UI300-LT3-V2, IP65, fitted in stainless steel housing 304L	40
With user interface UI300-LT3-V2, IP65	50
With user interface UI300-LT3-V2, IP54, UL-tested Parameters can be changed up to Service release level (2). Extended configuration is only possible via LSB remote software for PC	UL20
A 20 - INPUTS/OUTPUTS	Selection
Without inputs/outputs	00
4 analogue outputs 0/4 ... 20 mA	05
4 analogue outputs 0/2 ... 10 V	10
4 digital outputs, for outputting limit values and operating states	20
4 digital inputs	25
4 digital and 4 analogue outputs 4 ... 20 mA (required for SIL1 in combination with KS1D ECO/HT)	30
4 digital and 4 analogue outputs 0/2 ... 10 V (required for SIL1 in combination with KS1D ECO/HT)	35
4 digital inputs and 4 analogue outputs 0/4 ... 20 mA	50
4 digital inputs and 4 analogue outputs 0/2 ... 10 V	55
4 digital inputs, 4 digital and 4 analogue outputs 0/4 ... 20 mA	60
A 30 - LANGUAGE	Selection
German	D
English	E
French	F
A 40 - PROBE TYPE	Selection
KS1D ECO/KS1D-HT/BF (CO/H ₂ monitoring)	00
KS1D-Ex (ATEX CO/H ₂ monitoring)	01
LS2 ECO/LS2-HT/BF (O ₂ measurement)	LS2
LS2-Ex (ATEX O ₂ measurement)	LS2EX
A 50 - HART* COMMUNICATION	Selection
Without	00
* Highway Addressable Remote Transducer	
A 60 - EFFICIENCY CALCULATION	Selection
Without	00
Efficiency module With 2 PT100 inputs for ambient air and flue gas 0 ... 400 °C and 2 analogue outputs 0/4 ... 20 mA	01
A 70 - FIELDBUS CONNECTION	Selection
Select "01" if the module should be fitted, otherwise use order no. 657R5950	
Without	00
PROFIBUS DP	01

LT3 Lambda Transmitter.

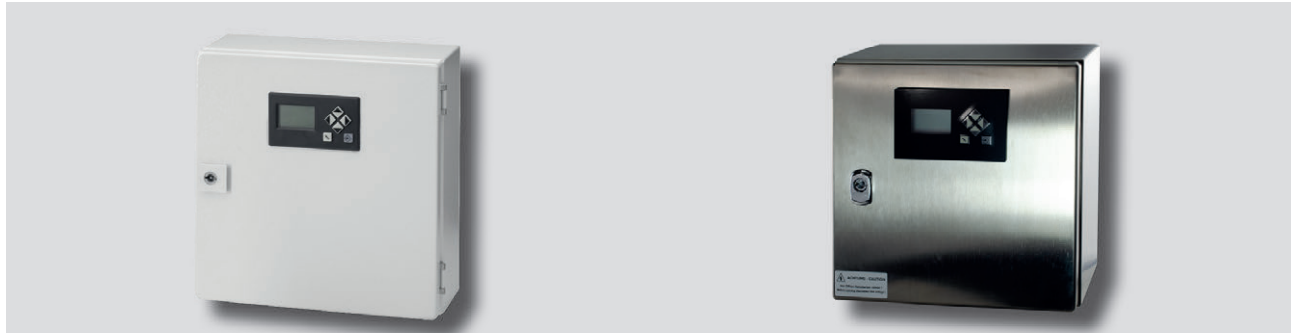
Special configuration	Selection
SIL2 1oo2 funct. Safety with monitoring	S010
SIL2 1oo2 funct. Safety without monitoring	S011
Stainless steel housing 304l	S07
SIL1 functional safety	S08
Stainless steel housing / SIL1	S09
A 80 - CO _e RANGE OF MEASURING (only relevant for KS1D)	Selection
Standard CO _e range of measuring 0 ... 1.000 ppm	00
Extended for CO _e range of measuring 0 ... 10.000 ppm	01

External display and operation

Designation/type	Order no.
LSB PC software , including connecting cable for LT3/LT3-F, length 4 m, with USB/CAN module	657R9000
When LSB PC software and USB/CAN module for BT300 are available: Connecting cable for LT3/LT3-F, length 4 m	657R0426

LT3-F Lambda Transmitter.

Technical data

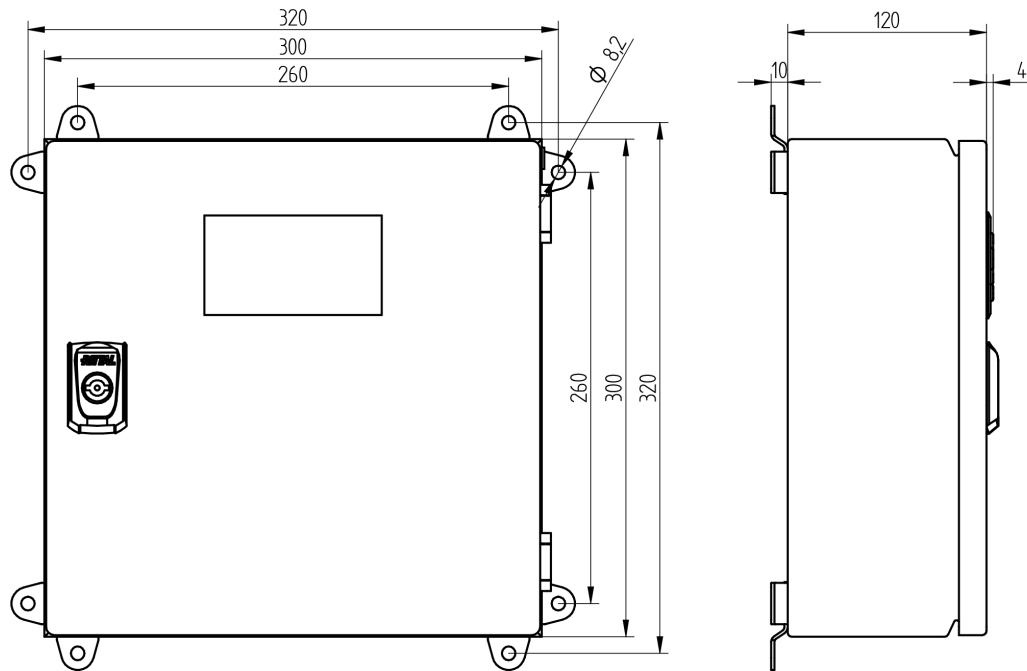


LT3-F housing with UI300-LT-V2

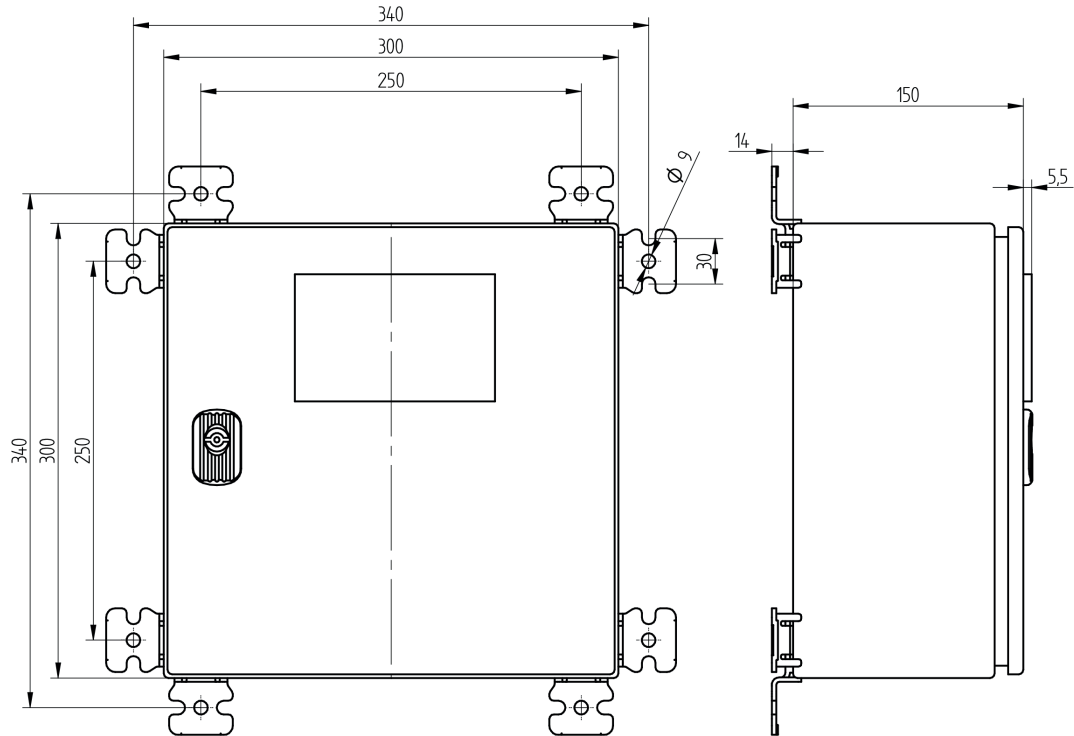
LT3-F in stainless steel housing with UI300-LT-V2 and additional cover for IP65

Possible applications	Only for SIL 2 / type approved CO/H ₂ control with LAMTEC burner control systems. Observe the safety manual!	Control elements	Display and operating unit with LCD graphic display (optional) LSB Remote Software (optional)
Supply voltage	120 VAC / -30 % ... 230 VAC / +10 %, 50 - 60 Hz	Operating temperature range	-20 ... +60 °C
Power consumption	30 W, up to max. 69 W	Dimensions [mm]	see dimensional drawing
Measurement accuracy	O ₂ : 0.1 % by vol. O ₂ CO _e 1 ppm in CO range 0 ... 1.000 ppm	Material	Sheet steel, powder-coated Stainless steel 304L
Time until operational readiness	When the probe is commissioned for the first time, wait 60 minutes; otherwise, about 10 minutes after "mains on".	Weight [kg]	Approx. 6
		Colour	RAL 7035 light grey
Interface	Direct communication with LAMTEC burner control systems via (LSB) and Field bus connection to PROFIBUS DP	Protection class	IP54 IP65 with additional cover
Communication	Transmission of measurement values, warning and fault messages, receipt of commands	Connectable probes	KS1D ECO KS1D-BF
		Approval	SIL 2 for CO/H ₂ control with KS1D DIN EN 16340

LT3-F Lambda Transmitter.



Dimensional drawing for LT3-F housing for wall mounting with UI300-LT-V2



LT3-F dimensional drawing in stainless steel housing

Order information

Designation/type	Order no.
LT3-F Lambda Transmitter in wall mounting housing	657R50 ...
A 10 - DISPLAY	Selection
With user interface Ui300/LT3-V2/IP54	20
With user interface UI300-LT3-V2, IP65	30
With user interface UI300-LT3-V2, IP65, fitted in stainless steel housing 304L	40
With user interface UI300-LT3-V2, IP54, UL-tested Parameters can be changed up to Service release level (2). Extended configuration is only possible via LSB PC software for PC	UL20
A 20 - INPUTS/OUTPUTS	Selection
Without inputs/outputs	00
4 analogue outputs 0/4 ... 20 mA	05
4 analogue outputs 0/2 ... 10 V	10
4 digital outputs, for outputting limit values and operating states	20
4 digital inputs	25
4 digital and 4 analogue outputs 0/4 ... 20 mA	30
4 digital and 4 analogue outputs 0/2 ... 10 V	35
4 digital inputs and 4 analogue outputs 0/4 ... 20 mA	50
4 digital inputs and 4 analogue outputs 0/2 ... 10 V	55
4 digital inputs, 4 digital and 4 analogue outputs 0/4 ... 20 mA	60
A 40 - HART* COMMUNICATION	Selection
Without	00

* Highway Addressable Remote Transducer

A 50 - EFFICIENCY CALCULATION	Selection
Without	00
Efficiency module With 2 PT100 inputs for ambient air and flue gas 0 ... 400 °C and 2 analogue outputs 0/4 ... 20 mA	01
A 60 - FIELDBUS CONNECTION	Selection
Select "01" if the module should be fitted, otherwise use order no. 657R5950	
Without	00
PROFIBUS DP	01

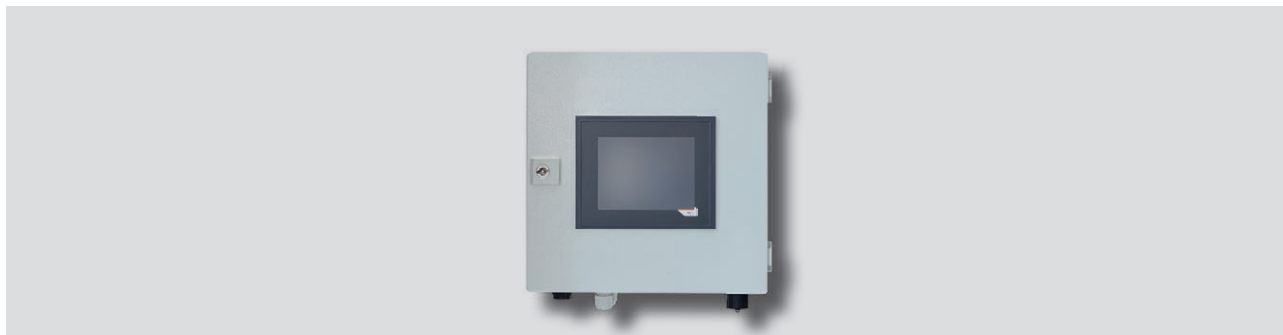
Additionally required:
KS1D ECO combination sensor in standard housing, order no. 656R2000 / 656R2002, and accessories
or KS1D-HT combination sensor, order no. 656R2015 / 656R2018, and accessories

External display and operation

Designation/type	Order no.
LSB PC software for PC from Windows XP, including connecting cable for LT3/LT3-F, length 4 m, with USB/CAN module	657R9000
When LSB remote software and USB/CAN module for BT300 are available: Connecting cable for LT3/LT3-F, length 4 m	657R0426

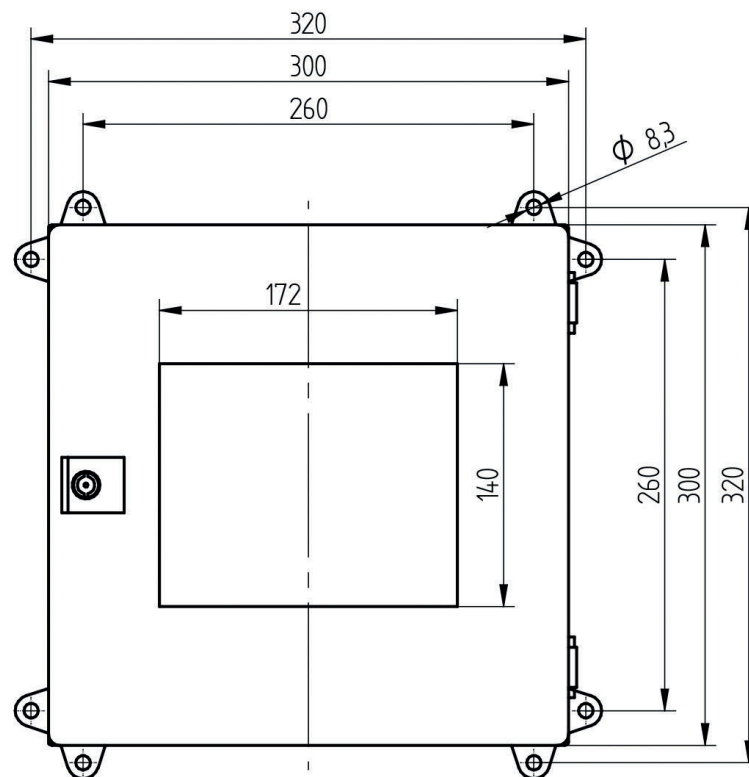
NT1 NO_x Transmitter.

Technical data



NT1 NO_x Transmitter

Possible applications	Specifically developed for the simultaneous measurement of O ₂ concentration and nitrogen oxides (NO _x) in flue gases from combustion systems in the superstoichiometric range ($\lambda > 1$)	Control elements	144,78 mm VGA industrial touch screen display (640 x 480)
Supply voltage	120 VAC / -25 % ... 230 VAC / +15 %, 50 ... 60 Hz	Operating temperature range	0 ... +50 °C
Power consumption	With 2 connected sensors: 42 W/0.22 A at 20 °C 72 W/1.23 A during the heating phase with 4 connected sensors: 72 W/0.35 A at 20 °C 150 W/1.23 A during the heating phase max. 250 W/1.23 A	Dimensions [mm]	see dimensional drawing
		Material	Sheet steel, powder-coated
		Weight [kg]	Approx. 7.6 (depending on equipment)
Measurement accuracy	O ₂ : 0.1 % by vol. NO _x : 1 ppm or mg/Nm ³	Colour	RAL 7035 light grey
Time until operational readiness	When the probe is commissioned for the first time, wait 60 minutes; otherwise, wait about 10 minutes after "mains on".	Protection class	IP65
Interface	Direct communication with LAMTEC burner control systems	Connectable probe	KS2DNOX
Communication	Transmission of measurement values, warning and fault messages, receipt of commands		



Dimensional drawing of NO_x Transmitter NT1

Order information

Designation/type	Order no.
NT1 NO _x Transmitter in wall mounting housing, max. one probe, including LSB	657R61
NT1 NO _x Transmitter in wall mounting housing, max. 2 probes, without LSB	657R62
NT1 NO _x Transmitter in wall mounting housing, max. 4 probes, without LSB	657R64

Mass flow measurement grid for volumetric flow measurement.

Introducing LAMTEC mass flow measurement grid for volumetric flow measurement

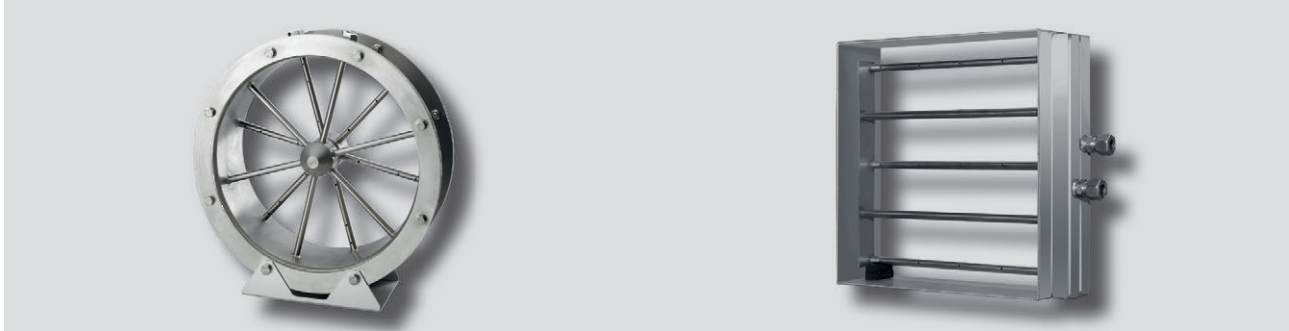
The LAMTEC mass flow measurement grids are used to measure volumetric flows, mass flows and flow velocities of gaseous media. The geometric design allows for individual adjustments to be made precisely in line with customer requests, while at the same time keeping head losses to a minimum. With the help of the LAMTEC calculation tool, LAMTEC measuring transducers or the customer's own measuring transducers can be designed to precisely match the given conditions.

Advantages:

- Volumetric flow measurement of gaseous media in channels (e.g. supply air for combustion systems)
- Rectangular and round versions
- Different sizes, lengths and flange connections
- Made of stainless steel
- Calculation data for pressure Transmitter included
- Optional flushing device available for particle-laden media
- High repetition accuracy
- Very short infeed distances and outlets
- Low head losses
- Low-maintenance
- Flexible thanks to customised production
- Customised solutions

Mass flow measurement grid for volumetric flow measurement.

Technical data

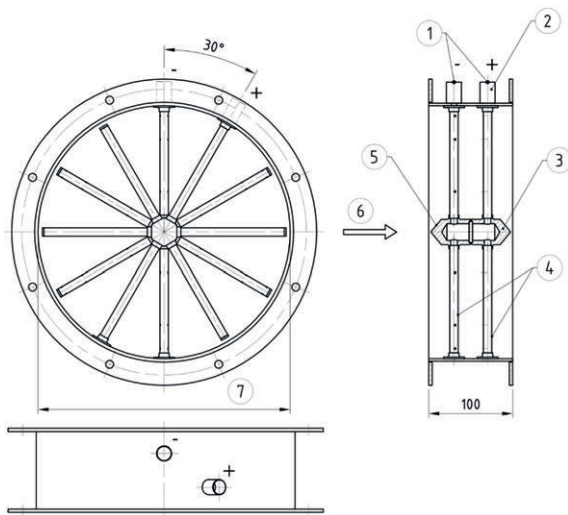


Round mass flow measurement grid with flange

Square mass flow measurement grid with flange

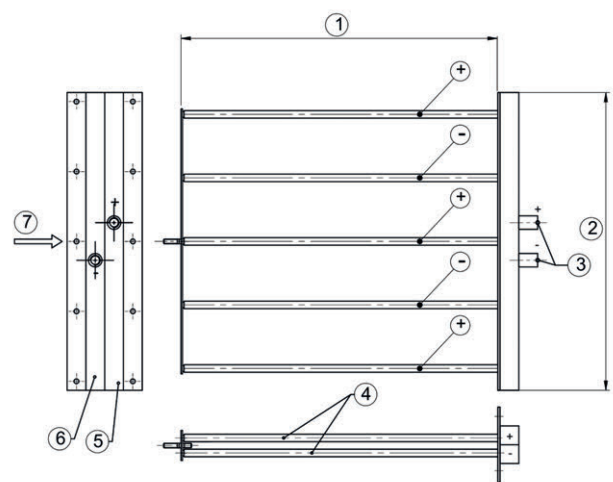
Possible applications	Volumetric flow measurement for non-aggressive, non-explosive, gaseous media with a known density	Round/Square model	Wall thicknesses from 2 to 5 mm with flange EN 12220 as an option
System pressure	-0.5 ... +0.5 bar (negative/positive media)	Temperature of measuring media	-20 °C ... +400 °C (other temperature ranges on request)
Assembly design	- Flange connection - Welded - Clamp connection for "Jacob pipe"	Dimensions [mm]	see dimensional drawing
Measurement accuracy	- Calibrated grids on test bench $\leq \pm 1\%$ of measurement value - Calculated grids $\leq \pm 5\%$ of measurement value - Calibrated grid on site $\leq \pm 2\%$ of the measurement value	Material	Stainless steel (other materials on request)
		Weight [kg]	Depending on size
Repeat accuracy	Standard repeat accuracy $\leq \pm 1\%$ of measurement value	Pneumatic connection	Pipe coupling G 1/4"

Mass flow measurement grid for volumetric flow measurement.



Dimensional drawing of round mass flow measurement grid with flange

- 1 Differential pressure connection G1/4"
- 2 Connection rotated in drawing
- 3 Collector +
- 4 Measuring pipe
- 5 Collector -
- 6 Direction of flow
- 7 Nominal diameter (internal diameter)



Dimensional drawing of square mass flow measurement grid

- 1 Air channel width
- 2 Air channel height
- 3 Differential pressure connection G1/4"
- 4 Measuring pipe
- 5 Collector +
- 6 Collector -
- 7 Direction of flow

Calculation formula:

Run-in path E = tolerance multiplier type of obstacle x mass flow measurement grid (round) or diagonal (square or rectangular)

Example calculation of infeed distance:

For "square deflection" type of obstacle, with a tolerance of $\pm 1\%$;

mass flow measurement grid size DN 300 mm

$$E = 6 \times 300 \text{ mm}$$

$$E = 1800 \text{ mm}$$

For "30° angle" type of obstacle, with a tolerance of $\pm 3\%$;

mass flow measurement grid size 800 mm x 300 mm

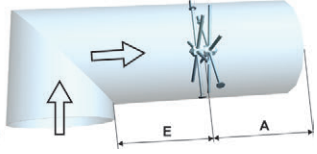
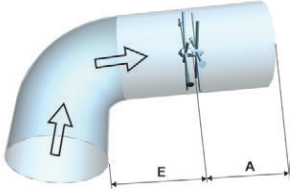
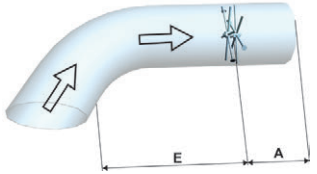
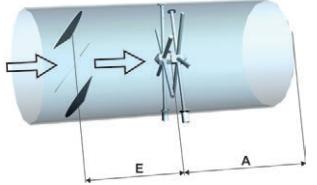
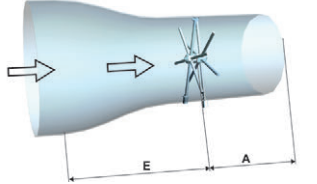
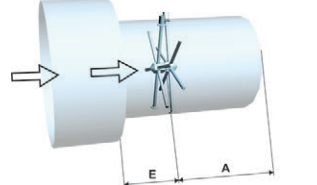
$$E = 2 \times 854 \text{ mm}$$

$$E = 1708 \text{ mm}$$

Outlet A should always correspond at least to the length of the diameter or the diagonal of the mass flow measurement grid.

Mass flow measurement grid for volumetric flow measurement.

Infeed distance table

Type of obstacle		Tolerance $\pm 1\%$ Infeed distance E	Tolerance $\pm 3\%$ Infeed distance E	Tolerance $\pm 5\%$ Infeed distance E
Square deflection		$6 \times \emptyset$	$5 \times \emptyset$	$3 \times \emptyset$
Angle 90° , radius 1 D or smaller		$5 \times \emptyset$	$4 \times \emptyset$	$2 \times \emptyset$
Angle 30°		$3 \times \emptyset$	$2 \times \emptyset$	$1 \times \emptyset$
Contraflow multi leaf damper		$4 \times \emptyset$	$3 \times \emptyset$	$2 \times \emptyset$
Gradual taper		$2 \times \emptyset$	$1 \times \emptyset$	$1 \times \emptyset$
Sudden taper		$3 \times \emptyset$	$1 \times \emptyset$	$1 \times \emptyset$

The tolerance data refers to the measurement value.

Mass flow measurement grid for volumetric flow measurement.

Order information

Mass flow measurement grid - square design - standard sizes (other sizes on request), material: Rust-free steel

Designation/type	Order no.
Mass flow measurement grid, height 300 mm x width 300 mm	654RE300x300
Mass flow measurement grid, height 350 mm x width 400 mm	654RE350x400
Mass flow measurement grid, height 400 mm x width 400 mm	654RE400x400
Mass flow measurement grid, height 500 mm x width 600 mm	654RE500x600
Mass flow measurement grid, height 700 mm x width 700 mm	654RE700x700
Mass flow measurement grid, height 750 mm x width 750 mm	654RE750x750
Mass flow measurement grid, height 800 mm x width 800 mm	654RE800x800
Mass flow measurement grid, height 850 mm x width 850 mm	654RE850x850
Mass flow measurement grid, height 900 mm x width 900 mm	654RE900x900
Mass flow measurement grid, height 950 mm x width 950 mm	654RE950x950
Mass flow measurement grid, height 1000 mm x width 1000 mm	654RE1000x1000
Mass flow measurement grid, height 1700 mm x width 380 mm	654RE1700x380
Mass flow measurement grid, height 1200 mm x width 1200 mm	654RE1200x1200

Order information

Mass flow measurement grid - round design - standard sizes (other sizes on request), material: Rust-free steel

Designation/type	Order no.
Mass flow measurement grid, round version Ø 300 mm, without flange	654RU300
Mass flow measurement grid, round version Ø 300 mm, with flange, according to EN12220	654RU300F
Mass flow measurement grid, round version Ø 400 mm, without flange	654RU400
Mass flow measurement grid, round version Ø 400 mm, with flange, according to EN12220	654RU400F
Mass flow measurement grid, round version Ø 500 mm, without flange	654RU500
Mass flow measurement grid, round version Ø 500 mm, with flange, according to EN12220	654RU500F
Mass flow measurement grid, round version Ø 600 mm, without flange	654RU600
Mass flow measurement grid, round version Ø 600 mm, with flange, according to EN12220	654RU600F
Mass flow measurement grid, round version Ø 700 mm, without flange	654RU700
Mass flow measurement grid, round version Ø 700 mm, with flange, according to EN12220	654RU700F
Mass flow measurement grid, round version Ø 800 mm, without flange	654RU800
Mass flow measurement grid, round version Ø 800 mm, with flange, according to EN12220	654RU800F
Mass flow measurement grid, round version Ø 900 mm, without flange	654RU900
Mass flow measurement grid, round version Ø 900 mm, with flange, according to EN12220	654RU900F
Mass flow measurement grid, round version Ø 1000 mm, without flange	654RU1000
Mass flow measurement grid, round version Ø 1000 mm, with flange, according to EN12220	654RU1000F
Mass flow measurement grid, round version Ø 1300 mm, without flange	654RU1300
Mass flow measurement grid, round version Ø 1300 mm, with flange, according to EN12220	654RU1300F
Mass flow measurement grid, round version Ø 1600 mm, without flange	654RU1600
Mass flow measurement grid, round version Ø 1600 mm, with flange, according to EN12220	654RU1600F

Order information

Counter flange - round - standard sizes (other sizes on request), material: Rust-free steel

Designation/type	Order no.
Counter flange according to EN12220, for mass flow measurement grid Ø 300 mm	654RU300G
Counter flange according to EN12220, for mass flow measurement grid Ø 400 mm	654RU400G
Counter flange according to EN12220, for mass flow measurement grid Ø 500 mm	654RU500G
Counter flange according to EN12220, for mass flow measurement grid Ø 600 mm	654RU600G
Counter flange according to EN12220, for mass flow measurement grid Ø 700 mm	654RU700G
Counter flange according to EN12220, for mass flow measurement grid Ø 800 mm	654RU800G
Counter flange according to EN12220, for mass flow measurement grid Ø 900 mm	654RU900G
Counter flange according to EN12220, for mass flow measurement grid Ø 1000 mm	654RU1000G
Counter flange according to EN12220, for mass flow measurement grid Ø 1300 mm	654RU1300G
Counter flange according to EN12220, for mass flow measurement grid Ø 1600 mm	654RU1600G

Accessories

Designation/type	Order no.
3-way valve with cutting ring fitting 12 mm to the mass flow measurement grid, material stainless steel 1.4571, device side connection: Flange DIN 19213	654R0602
3-way valve with cutting ring fitting 12 mm to the mass flow measurement grid, material stainless steel 1.4571, device side connection: Thread G 1/8"	654R0606
Mounting plate with 3-way valves for mounting the differential pressure transducer	654R0606HW
5-way valve with cutting ring fitting 12 mm to the mass flow measurement grid and compressed air connection, material stainless steel 1.4571, with purging connections, device side connection: Thread G 1/8"	654R0604
5-way valve with cutting ring fitting 12 mm to the mass flow measurement grid and compressed air connection, material stainless steel 1.4571, with purging connections, device side connection: Flange DIN 19213	654R0603
Mounting plate with 5-way valves for mounting the differential pressure transducer	654R0603HW
Differential pressure transducer 0 ... 250 Pa, 24 VDC, output root-extracted/linear	654R0660
Differential pressure transducer 0 ... 1,000 Pa, 24 VDC, output root-extracted/linear	654R0662
Differential pressure transducer 0 ... 7,000 Pa, 24 VDC, output root-extracted/linear	654R0664
Differential pressure transducer 0 ... 250 Pa, 24 VDC, with P-/T-compensation	654R0665
Differential pressure transducer 0 ... 1,000 Pa, 24 VDC, with P-/T-compensation	654R0666
Differential pressure transducer 0 ... 250 Pa, 24 VDC, with P-/T-compensation, 2 relay outputs	654R0665R
Differential pressure transducer 0 ... 1,000 Pa, 24 VDC, with P-/T-compensation, 2 relay outputs	654R0666R
Purge unit in wall mounting housing for a mass flow measurement grid	654R0610
Hose PTFE 10/8 mm, colour: natural - per meter	650P0718
PTFE sealing tape 12x4 mm, single-sided white adhesive - per meter	654R0101

**LAMTEC Meß- und Regeltechnik
für Feuerungen GmbH & Co. KG**

Josef-Reiert-Straße 26

D-69190 Walldorf, Germany

Telephone: +49 (0) 6227 6052-0

Fax: +49 (0) 6227 6052-57

info@lamtec.de
www.lamtec.de

