Technical Data LT10 with Measuring Gas Pump

Fig. 1 LT10 ...

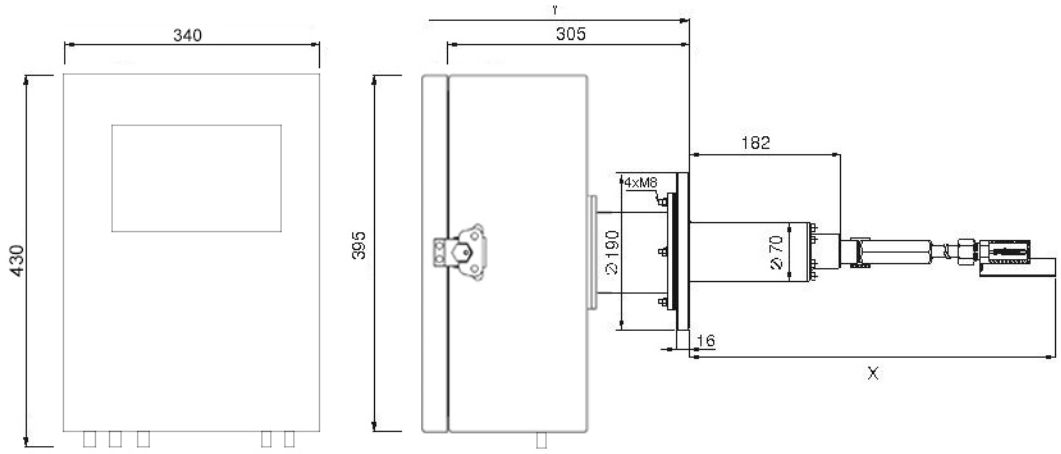

Fig. 2 Dimensions

X Insertion depth, dimension X (see table)

Y Dimensions with open cover: 630mm/24.8" in

Immersion Depth Dimension X in	Gas Extraction Device (GED)		
	Standard up to 700 °C/1,292 °F (stainless steel 1.4571) type (order no.)	**Inconel up to 950 °C/1,742 °F type (order no.)**	**Ceramic up to 1400 °C/2,552 °F type (order no.)**
300mm/11.8" in	657R3015	-	-
500mm/19.7" in	657R3040	657R3020	657R3030
800mm/31.5" in	657R3041	657R3021	657R3031
1000mm/39.4" in	657R3042	657R3022	657R3032
1400mm/55.1" in	657R3043A	657R3023A	-
1800mm/70.9" in	657R3044A	657R3024A	-

⚠ CAUTION!

When ordering replacement GED (gas extraction devices), bear in mind that the insertion depth is measured from the flange, not across the entire length of the device.

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Dimensions	
Surface	Sheet steel housing, orange varnished Probe unit stainless steel 1,4571 (V4A)
Dimensions of sheet-steel housing (HxWxD)	395x340x305 mm/15.5"x13.4"x12" in
Weight	27 kg/59.5 lb (with 1 m/3.3 ft gas extraction device). With GED-Heating 500mm/1000mm/19.7" in/39.4" in additional 4 kg/6 kg/8.8 lb/13.2 lb

Input data	
Power supply	230 VAC and 115 VAC, +10 % / -15 %, 48 Hz ... 62 Hz **ATTENTION: To be used only in grounded power line networks!**
Power consumption (without heater for gas extraction device and filter)	typical 160 VA max. 250 VA

Measuring Data	
Measuring principle	Zirconium dioxide current probe
Operating temperature of measuring cell	800 °C ... 1000 °C/1,472 °F ... 1,832 °F
Measured gas flow rate	typical: 0,5 l/h - equal to 500 mA probe current
Resolution	0,1 vol.% O_2
Measurement accuracy	better than 0,2 vol.% O_2 across the entire range (0 ... 25 vol. % O_2) after previous calibration
Detection limit	0,1 vol.% O_2
Cross-sensitivity	None vis-a-vis H_2O, CO_2, SO_2, HCl
Signal interference from combustible gases	At concentrations: ≤ 1000 ppm CO ≤ -0,05 vol.% O_2 ≤ 1000 ppm NO ≤ -0,05 vol.% O_2 ≤ 1000 ppm CH_4 ≤ -0,2 vol.% O_2
Interference of all gases	≤ +0,2 vol.% O_2
Probe current	0 ... 1000 mA, typical value for air: 300 ... 600 mA, depending on flow rate
Maximum permissible duration of flue gas temperature	Standard GED 700 °C/1,292 °F Inconel GED 950 °C/1,742 °F Ceramic GED 1400 °C/2,552 °F
Temporal drift of zero and reference point	< 0,2 vol.% O_2 of each maintenance rate
Response time (90 % time)	< 20 s (with standard gas extraction device, 1m/3.3 ft long)
Time for ready status	< 2 hours

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Analogue Outputs	
1 Analogue output standard	0/4 … 20 mA, 0/2 ... 10 V, floating max. potential difference ± 20 V Resolution: 0,01 mA Accuracy: 0,01 mA Load: 800 Ω Factory setting: 4 ... 20 mA DC → 0 ... 21 vol.% O_2
Monitor output	Output: 0 ... 2,55 VDC, load > 10 kW, < 100 nF Accuracy: 2 % of measured value, not better than 0,1 vol.% O_2 Resolution: 10 mV Factory setting: 0 ... 2.55 VDC → 0 ... 25.5 vol.% O_2 Monitor function: Can be switched to (via DIP switch): probe voltage U_S 0 ... 255 mV DC, equal to 0 ... 2.55 V internal probe (cell) resistance R_I 0 ... 255 Ω, equal to 0 ... 2.55 V
Further analogue outputs	4 analogue outputs 0 ... 20 mA, 0 ... 10 V possible via LSB module

Analogue Inputs	
Analogue inputs	4 analogue inputs 0 ... 20 mA, 0 ... 10 V possible via LSB module

Digital Outputs	
Digital outputs	4 relay outputs 250 V, 6 A possible via LSB module

Digital Inputs	
Digital inputs	4 digital inputs 24 VDC possible via LSB module

Control element	
Control element	• Display and operating unit via 2 rows of LED each with 6 LED multi-function key, maintenance switch • Display and operating unit with graphical LCD-display • Remote control unit (option) • LSB remote software /PC (option)

Interfaces:	
Interfaces	• LAMTEC SYSTEM BUS for connection to other LSB devices, alternatively RS422 • Additional RS422 (option) • Field bus interfaces (option): – Profibus DP – Modbus RTU – Modbus TCP/IP – CANopen – Interbus S • RS 232 for connecting a PC with remote display software

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Operating condition	
Relative humidity	0 % ... 100 %
Installation height	< 2,000 m / 6,561.68 ft above sea level
TÜV qualification test	TÜV (qualification tested for emissions measuring devices to Federal German Pollution Control Act (13th and 17th Implementing Ordinance) Test no. 2: 936 / 21203535 / A

Environmental conditions		
Operation	perm. temperature range	-20 ... +55 °C / -4 ... 131 °F In conjunction with transmitter protective housing (option) up to -40 °C / -40 °F A Thermal Jacket is recommended for ambient temperature under 0 °C / +32 °F. It is absolutely necessary under -10 °C / +14 °F. Protect the display from direct sunlight.
Transport	perm. temperature range	-40 ... +85 °C / -40 ... +185 °F
Storage	perm. temperature range	-40 ... +85 °C /-40 ... +185 °F
Degree of protection	according to DIN EN 40050	IP65; NEMA 4X (use inside and outside buildings possible, cover recommended)
CE Declaration of Confomity	2014/35/EU	Low Voltage Directive
	2014/30/EU	EMC Directive
	2011/65/EU	RoHS Directive

NOTICE

The limits of the technical data must be strictly adhered to.

Technical Data LT10 with Measuring Gas Pump

Order Information

O_2-Measurement Lambda Transmitter LT10
Lambda Transmitter LT10-P (Pump)
Gas Extraction Set
Heating for Gas Extraction Set

Lambda Transmitter LT10-P, protection class IP65* - without gas extraction set

Description / Type	Order no.
Lambda Transmitter LT10-P with automatic calibrating unit, Display and operating unit, without gas extraction device, in sheet steel housing IP65	657R4003

* Additional required: Gas extraction set, counter flange and gasket.
To avoid dew point under range: Gas extraction set with heating

Gas Extraction Set Standard

Including gas extraction device and protective tube with sintered metal pre-filter 20 µm for flue gas temperatures up to 700 °C/1,292 °F, Material: stainless steel 1.4571

Description / Type	Order no.
Gas extraction device for immersion depth from flange 300 mm/11.81" in	657R3015
Gas extraction device for immersion depth from flange 500 mm/19.69" in, protective tube with AL-core for thermal conductivity	657R3040
Gas extraction device for immersion depth from flange 800 mm/31.5" in, protective tube with AL-core for thermal conductivity	657R3041
Gas extraction device for immersion depth from flange 1.000 mm/39.37" in, protective tube with AL-core for thermal conductivity	657R3042
Gas extraction device for immersion depth from flange 1.400 mm/55.12" in, protective tube with AL-core for thermal conductivity and bracket	657R3043A
Gas extraction device for immersion depth from flange 1.800 mm/70.87" in, protective tube with AL-core for thermal conductivity and bracket	657R3044A
Sintered metal pre-filter for protective tube up to 700 °C/1,292 °F, 2 µm instead of 20 µm	655R1209
Sintered metal pre-filter for protective tube up to 700 °C/1,292 °F, 10 µm instead of 20 µm	655R1211
Sintered metal pre-filter for protective tube up to 700 °C/1,292 °F, 40 µm instead of 20 µm	655R1210

Gas Extraction device with Heating

Including gas extraction device and protective tube with sintered metal pre-filter 20 µm, intermediate flange, gasket, power supply unit 230 VAC* and flange heating 230 VAC* for flue gas temperatures up to 450 °C/842 °F, Material: stainless steel 1.4571

Description / Type	Order no.
Heating for gas extraction device, immersion depth from flange 800 mm/31.5" in	657R3051
Heating for gas extraction device, immersion depth from flange 1.000 mm/39.37" in	657R3052
Heating for gas extraction device, bracket and power supply, immersion depth from flange 1.400 mm/55.12" in	657R3053A
Heating for gas extraction device, bracket and power supply, immersion depth from flange 1.800 mm/70.87" in	657R3054A
Additional cost for version 115 VAC	657R3524

Technical Data LT10 with Measuring Gas Pump

Gas Extraction Set with Heating and Pre-filter Heating

Including gas extraction device and protective tube with sintered metal pre-filter 20 µm, intermediate flange, gasket, power supply unit 230 VAC* pre-filter heating 230 VAC*
for flue gas temperatures up to 450 °C/842 °F, Material: stainless steel 1.4571

Description / Type	Order no.
Gas extraction device with heating and pre-filter heating, immersion depth from flange 500 mm/19.69" in	657R3060
Gas extraction device with heating and pre-filter heating, immersion depth from flange 800 mm/31.5" in	657R3061
Gas extraction device with heating and pre-filter heating, incl. bracket, immersion depth from flange 1.000 mm/39.37" in	657R3062A
Gas extraction device with heating and pre-filter heating, incl. bracket, immersion depth from flange 1.400 mm/55.12" in	657R3063A
Gas extraction device with heating and pre-filter heating, incl. bracket, immersion depth from flange 1.800 mm/70.87" in	657R3064A
Additional cost for flange heating, version 115 VAC	657R3524
Sintered metal filter for pre-filter heating 2 µm instead of 20 µm	655R1215
Sintered metal filter for pre-filter heating 10 µm instead of 20 µm	655R1214
Sintered metal filter for pre-filter heating 40 µm instead of 20 µm	655R1216

* For version in 115 VAC the option 657R3524 must be ordered additionally

Gas Extraction Set up to 950 °C/1,742 °F

Including gas extraction device and protective tube with sintered metal pre-filter 20 µm
for flue gas temperatures up to 950 °C/1,742 °F, Material: INCONEL 600 2.4816

Description / Type	Order no.
Gas extraction set for immersion depth from flange 500 mm/19.69" in	657R3020
Gas extraction set for immersion depth from flange 800 mm/31.5" in	657R3021
Gas extraction set for immersion depth from flange 1.000 mm/39.37" in	657R3022
Gas extraction set for immersion depth from flange 1.400 mm/55.12" in, incl. bracket	657R3023A
Gas extraction set for immersion depth from flange 1.800 mm/70.87" in, incl. bracket	657R3024A
Sintered metal filter for protective tube INCONEL 600, up to 950 °C/1,742 °F, 2 µm instead of 20 µm	655R1206
Sintered metal filter for protective tube INCONEL 600, up to 950 °C/1,742 °F, 10 µm instead of 20 µm	655R1207
Sintered metal filter for protective tube INCONEL 600, up to 950 °C/1,742 °F, 40 µm instead of 20 µm	655R1208
Protective tube INCONEL in high dust application	657R3428

Protective Tube for High Dust Application

for flue gas temperatures up to 700 °C/1,292 °F, Material: stainless steel 1.4571

Description / Type	Order no.
Protective tube for high dust application, immersion depth from flange 500 mm/19.69" in *	657R3560
Protective tube for high dust application, immersion depth from flange 800 mm/31.5" in *	657R3561
Protective tube for high dust application, immersion depth from flange 1.000 mm/39.37" in *	657R3562
Protective tube for high dust application, immersion depth from flange 1.400 mm/55.12" in *	657R3563
Protective tube for high dust application, immersion depth from flange 1.800 mm/70.87" in *	657R3564

* Additional required: Adapter flange type 657R3511 / 657R3512

Protective Tube for High Dust Application

for flue gas temperatures up to 950 °C//1,742 °F, Material: INCONEL 600 2.4816

Description / Type	Order no.
Protective tube for high dust application, immersion depth from flange 500 mm/19.69" in *	657R3570
Protective tube for high dust application, immersion depth from flange 800 mm/31.5" in *	657R3571
Protective tube for high dust application, immersion depth from flange 1.000 mm/39.37" in *	657R3572
Protective tube for high dust application, immersion depth from flange 1.400 mm/55.12" in *	657R3573
Protective tube for high dust application, immersion depth from flange 1.800 mm/70.87" in *	657R3574

* Additional required: Adapter flange type 657R3511 / 657R3512

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Adapter Flange for High Dust Protective Tube

Description / Type	Order no.
Adapter flange with seal for high dust protective tube, material: steel galvanized	657R3511
Adapter flange with seal for high dust protective tube, material: stainless steel 1.4571	657R3512

Purge device for high dust protective tube

Description / Type	Order no.
Purge unit for high dust protective tube at LT10-P	657R4030

Display and Operation Unit for Lambda Transmitter LT10

Description / Type	Order no.
Serial interface cable, D-Sub 9-pins connectors (female), length 10 m/32.8 ft	663R0100
Extension for serial interface cable type 663R0100, length 10 m/32.8 ft (extension to a total of max. 40 m/131.23 ft)	663R0101

Accessories

Description / Type	Order no.
Counter flange DN80 PN6 with tube DI 125 mm/4.92" in, tube length 75 mm/2.95" in, Material: steel EPD, black (also suitable for GED-heating or high dust application)	657R3506
Counter flange DN80 PN6 with tube DI 125 mm/4.92" in, tube length 75 mm/2.95" in Material: stainless steel 1.4571 (also suitable for GED-heating or high dust application)	657R3507
Thermo Jacket for sheet steel housing (weather protection)	657R4015
Module with 4 digital outputs, floating contacts, installed in LT10	663R4027

The information in this publication is subject to technical changes.

LAMTEC Meß- und Regeltechnik
für Feuerungen GmbH & Co. KG
Josef-Reiert-Straße 26
D-69190 Walldorf
Telefon: +49 (0) 6227 6052-0
Telefax: +49 (0) 6227 6052-57

info@lamtec.de
www.lamtec.de

Print no. DLT6210-22-EN-002