

Technical Data LT2 in Wall Mounting Housing



Fig. 1-1 LT2 in wall-mounted housing

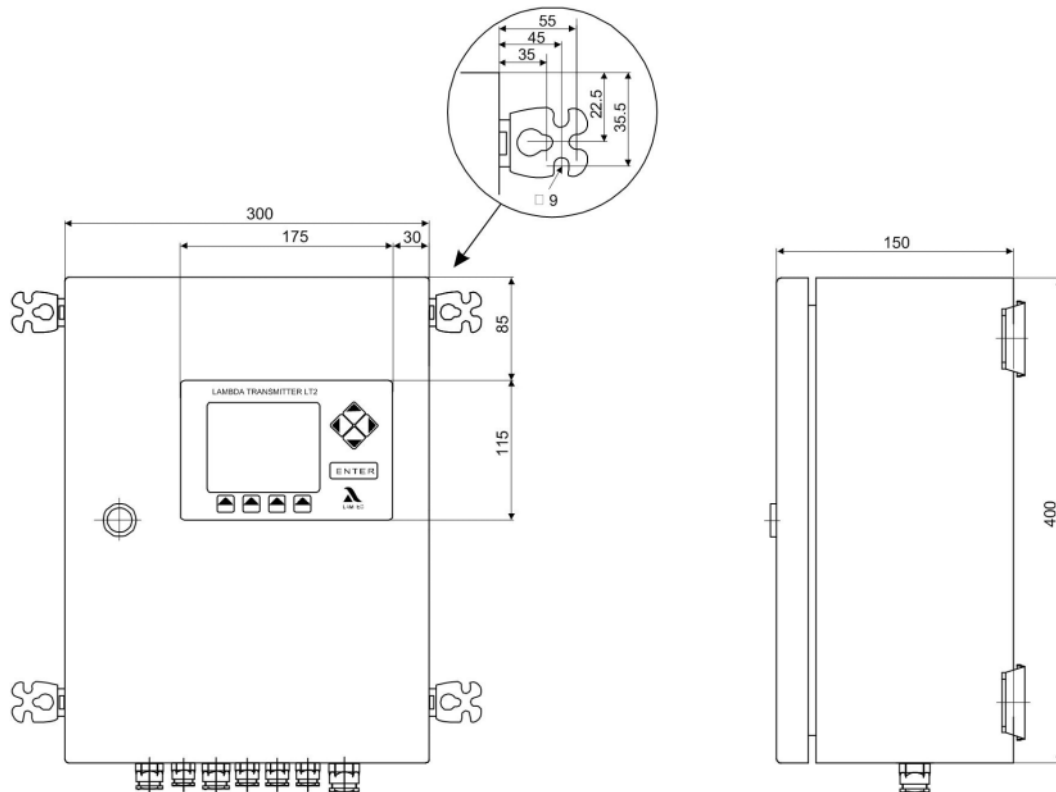


Fig. 1-2 Wall mounting housing without reference gas pump

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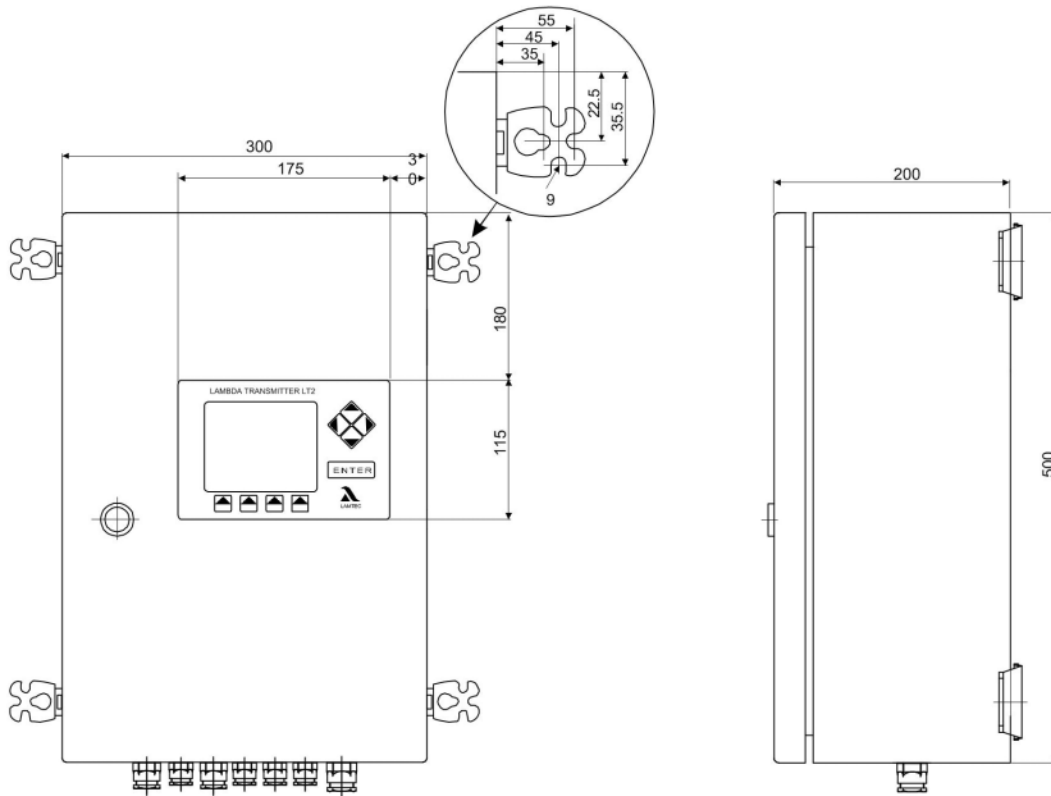


Fig. 1-3 Wall mounting housing with reference gas pump

LT2 in wall mounting housing

Housing	Housing in sheet steel, powder-coated
Dimensions (HxWxD)	400x300x150 mm/15.75"x11.81"x5.91" in - without reference gas pump 500x300x200 mm/19.69"x11.81"x7.87" in - with reference gas pump
Colour	Light grey RAL 7035
Weight	10 kg/22.05 lb with display and operating unit +0,5 kg/1.10 lb
Control elements	Display and operating unit with LCD graphic display (option) LSB Remote Software (option)

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Characteristics	
Power supply	230 VAC and 115 VAC +10 % / -15 %, 48 Hz ... 62 Hz Use only in earthed networks!
Power consumption	max. 50 VA short-term 150 VA (heating phase probe)
Display	LCD graphic display 100x80 mm (BxH)/3.94"x3.15" in in panel installation housing = standard in wall mounting housing = optional
Resolution	O ₂ : 0,1 Vol. % O ₂ in range 0 ... 18 Vol. % O ₂ 1,0 Vol. % O ₂ in range 18 ... 30 Vol. % O ₂ CO: 1 ppm in CO range
Measurement accuracy (standard value) – other Measurement accuracies can be achieved depending on the design	With Lambda Probe LS2: 0,1 Vol. % O ₂ in range 0 ... 18 Vol. % O ₂ 1,0 Vol. % O ₂ in range 18 ... 30 Vol. % O ₂ With Combination Probe KS1 or KS1D: O ₂ : ±10 % of the measured value, no more precise than 0,3 Vol. % O ₂ CO: ±25 % of the measured value, no more precise than ±10 ppm on natural gas combustion, after previous calibration under operating plant conditions with a CO-reference measurement in measuring range 0 ... 100 ppm
Time for operational readiness	approx. 10 minutes after MAINS ON
Cold start delay	automatically cold start delay, 10 min.
Analogue outputs	
Monitor output	0 ... 2,55 VDC, load >10 kΩ, ≤100 nF
1 ... 4 current/voltage outputs	1 (LS2, KS1) or 2 (KS1D) standard – up to 4 options direct current 0/4 ... 20 mA load 0 ... 600 Ω direct voltage 0 ... 10 V load ≥10 kΩ non floating (potential isolation optional)
Analogue inputs	
Analogue inputs: 1 ... 4	via plug-in card on LT2 power pack electronic – Analogue input module potentiometer 1 ... 5 kΩ type 657P6000 – Analogue input module 0/4 ... 20 mA type 663P6001 – Analogue input module 0/4 ... 20 mA with supply 24 VDC for transducer type 663P6002 – Temperature input for Pt100 sensor type 657R0890 temperature range 0 ... 320 °C/32 °F ... 608 °F/ 0 ... 850 °C/32 °F ... 1562 °F resolution 1 °C/33.8 °F
Digital output	
Digital output	1 standard + 6 optional – 1 relay output 0 ... 230 VAC, 2 A – 0 ... 42 VDC, 3 A collective fault indicator – relay card with 6 relays (1 changeover switch) 0 ... 230 VAC, 2 A – 0 ... 42 VDC, 3 A

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Digital input	
Digital input	8 inputs - configurable (any) Factory settings: 24 VDC referenced to instrument potential, Can be switched via jumper to floating, for external voltage source.
Interface	
Interface	LAMTEC SYSTEM BUS RS 232 only in combination with LSB Remote Software
BUS connection	PROFIBUS DP Modbus RTU
Operating condition	
ambient temperature	Operation: -20 °C ... +60 °C/-4 °F ... 140 °F Transport and storage: -40 °C ... +85 °C/-40 °F ... 185 °F
Protection class to DIN 40050	IP65
CE Declaration of Conformity	2014/30/EU – EMC Directive 2014/35/EU – Low Voltage Directive 2011/65/EU – RoHS Directive

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Order Information

657R102 -	A 03 FOR PROBE	A 06 TYPE	A 09 DISPLAY	A 12 PRESSURE SENSOR	A 15 ANALOGUE OUTPUT 1	A 18 ANALOGUE OUTPUT 2	A 21 ANALOGUE OUTPUT 3	A 24 ANALOGUE OUTPUT 4	
A 27 ANALOGUE INPUT 1	A 30 ANALOGUE INPUT 2	A 33 ANALOGUE INPUT 3	A 36 ANALOGUE INPUT 4	A 39 DIGITAL OUTPUTS, LIMIT VALUES, O ₂ -CONTROLLER, FIRING-RATE		A 42 EFFICIENCY CALCULATION/ TEMPERATURE MEASUREMENT		A 45 POWER SUPPLY VOLTAGE	
A 48 REFERENCE AIR PUMP		A 51 HOUSING HEATING		A 54 CO/O ₂ -CONTROL/ MONITORING		A 57 CALCULATIONS		A 60 LANGUAGE	A 63 SPECIAL CONFIGURATION

A 03 – PROBE

	Selection
CONFIGURATED FOR COMBI PROBE KS1 (CO-DETECTION)	KS1
CONFIGURATED FOR COMBI PROBE KS1D (O ₂ -MEASUREMENT and CO-DETECTION)	KS1D
CONFIGURATED FOR LAMBDA PROBE LS2 (O ₂ -MEASUREMENT)	LS2

A 06 – TYPE

	Selection
STANDARD	1S*
FOR PROBE WITH BYPASS TUBE AND PURGE UNIT internal built-in relay module R0017 (attribute 39, selection 30) is necessary	3A
FOR PROBE TYPE "K - SEMI AUTOMATIC CALIBRATION" Internal built-in pressure sensor card required (analogue input 1 A27 and analogue input 2 A30), selection not necessary, will be setted automatically by the system!	3K
FOR PROBE TYPE "KR - SEMI AUTOMATIC CALIBRATION WITH CYCLIC REGENERATION" Internal built-in pressure sensor card (analogue input 1 A27 and analogue input 2 A30), internal built-in relay module R0017 (attribute 39, selection 30) and reference air pump (attribute 48) is required, selection not necessary, will be setted automatically by the system!	3KR
FOR PROBE TYPE "KA - SEMI AUTOMATIC CALIBRATION AND PURGING" Internal built-in pressure sensor card (analogue input 1 A27 and analogue input 2 A30) and internal built-in relay module R0017 (attribute 39, selection 30) is required, selection not necessary, will be setted automatically by the system!	4KA
FOR PROBE TYPE "KV - FULL AUTOMATIC CALIBRATION" Internal built-in pressure sensor card (analogue input 1 A27 and analogue input 2 A30) and internal built-in relay module R0017 (attribute 39, selection 30) is required, selection not necessary, will be setted automatically by the system!	5KV
FOR PROBE TYPE "KVA - FULL AUTOMATIC CALIBRATION AND PURGING" Internal built-in pressure sensor card (analogue input 1 A27 and analogue input 2 A30) and internal built-in relay module R0017 (attribute 39, selection 30) is required, selection not necessary, will be setted automatically by the system!	6KVA
FOR PROBE TYPE "KVR - FULL AUTOMATIC CALIBRATION WITH CYCLIC REGENERATION" Internal built-in pressure sensor card (analogue input 1 A27 and analogue input 2 A30) and internal built-in relay module R0017 (attribute 39, selection 30) is required, selection not necessary, will be setted automatically by the system!	6KVR
FOR PROBE TYPE "EX-AREA 1"	7EX1
FOR PROBE TYPE "EX-AREA 2"	8EX2
FOR PROBE TYPE "HT - EJECTOR EXTRACTION" internal built-in relay module R0017 (attribute 39, selection 30) is necessary	9E

* (Default setting)

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A 09 – DISPLAY	Selection
WITHOUT DISPLAY AND OPERATION UNIT or EXTERNAL (wall mounting housing without window)	a0*
WITH DISPLAY AND OPERATION UNIT (wall mounting housing with window)	a1

* (Default setting)

A 12 – PRESSURE SENSOR – Selection not necessary, will be setted automatically by the 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 FLOATING	c14	c24	c34	c44
ANALOGAUSGANG STROM 4 ... 20 mA FLOATING REG Necessary in conjunction with O ₂ -control via analogue input at FMS/VMS (0 ... 25 Vol.% O ₂ → 4 ... 20 mA)	c15	c25	c35	c45
ANALOGUE OUTPUT CURRENT 0 ... 20 mA FLOATING	c16	c26	c36	c46
ANALOGUE OUTPUT VOLTAGE 0 ... 10 V FLOATING	c17	c27	c37	c47
ANALOGUE OUTPUT CURRENT 4 ... 20 mA GALVANICALLY ISOLATED	c19	c29	c39	c49

* (Default setting)

A 27/30/33/36 – ANALOGUE INPUT 1/2/3/4 Selection not necessary, will be setted automatically by the system

A 39 – DIGITAL OUTPUTS, LIMIT VALUES, O ₂ -CONTROLLER, FIRING-RATE	Selection
WITHOUT RELAY MODULE	e00*
RELAY MODULE WITH 6 DIGITAL OUTPUTS (EACH WITH ONE CHANGE-OVER CONTACT)	e30
FIRING-RATE DEPENDENT LIMIT VALUES, FIRING-RATE INPUT VIA LSB, INCL. DIGITAL OUTPUTS	e31
FIRING-RATE DEPENDENT LIMIT VALUES, FIRING-RATE INPUT VIA POTENTIOM. INCL. DIGITAL OUTPUTS	e32
FIRING-RATE DEPENDENT LIMIT VALUES, FIRING-RATE INPUT VIA CURRENT, INCL. DIGITAL OUTPUTS	e33
O ₂ -CONTROLLER (PID), FIRING-RATE INPUT VIA LSB, INCL. DIGITAL OUTPUTS**	e34
O ₂ -CONTROLLER (PID), FIRING-RATE INPUT VIA POTENTIOMETER, INCL. DIGITAL OUTPUTS**	e35
O ₂ -CONTROLLER (PID), FIRING-RATE INPUT VIA CURRENT, INCL. DIGITAL OUTPUTS**	e36
OUTPUT of "INTERNAL FIRING-RATE" AT ANALOGUE OUTPUT	e40

* (Default setting)

** Additional required: analogue output current 4 ... 20 mA, floating, for output of the O₂-controller value

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A 42 – "EFFICIENCY CALCULATION, TEMPERATURE MEASUREMENT"	Selection
Analogue outputs for the flue gas temperature and / or the efficiency must be ordered separately (attribute A18/A21)	
Additional required: Temperature sensor PT100, -50 °C ...+400 °C/-58 °F ... +752 °F, length 150 mm/5.91" in, order no. 657R0897 and/or Temperature sensor PT100, -50 °C ... +400 °C/-58 °F ... +752 °F, length 250 mm/9.84" in, order no. 657R0891	
WITHOUT EFFICIENCY CALCULATION	f0*
EFFICIENCY CALCULATION WITH FIXED ENVIRONMENT TEMPERATURE FLUE GAS TEMPERATURE RANGE 0 ... 320 °C/32 °F ... 608 °F, WITHOUT ANALOGUE OUTPUT	f1
EFFICIENCY CALCULATION WITH FIXED ENVIRONMENT TEMPERATURE FLUE GAS TEMPERATURE RANGE 0 ... 850 °C/32 °F ... 1,562 °F, WITHOUT ANALOGUE OUTPUT	f11
EFFICIENCY CALCULATION FLUE GAS AND ENVIRONMENT TEMPERATURE 0 ... 320 °C/32 °F ... 608 °F, WITHOUT ANALOGUE OUTPUT	f2
EFFICIENCY CALCULATION FLUE GAS AND ENVIRONMENT TEMPERATURE 0 ... 850 °C/32 °F ... 1,562 °F, WITHOUT ANALOGUE OUTPUT	f22
FLUE GAS TEMPERATURE MEASUREMENT 0 ... 850 °C/32 °F ... 1,562 °F, WITHOUT ANALOGUE OUTPUT	f3
FLUE GAS TEMPERATURE MEASUREMENT 0 ... 320 °C/32 °F ... 608 °F, WITHOUT ANALOGUE OUTPUT	f33
* (Default setting)	
A 45 – POWER SUPPLY VOLTAGE	Selection
POWER SUPPLY VOLTAGE 230 VAC	g1*
POWER SUPPLY VOLTAGE 115 VAC	g2
* (Default setting)	
A 48 – REFERENCE AIR PUMP	Selection
Only necessary in conjunction with K-probes, if reference air of the probe can't be provided via on-site compressed air	
WITHOUT REFERENCE AIR PUMP (dimensions wall mounting housing 400x300x150 mm)	i0*
REFERENCE AIR PUMP 230 VAC (dimensions wall mounting housing 500x300x200 mm)	i1
REFERENCE AIR PUMP 115 VAC (dimensions wall mounting housing 500x300x200 mm)	i3
* (Default setting)	
A 51 – HOUSING HEATING	Selection
WITHOUT HOUSING HEATING	k0*
HOUSING HEATING 230 VAC/120 W	k1
* (Default setting)	
A 54 – CO/O₂-CONTROL/-MONITORING	Selection
WITHOUT CO/O ₂ -CONTROL/-MONITORING	m0*
CO/O ₂ -CONTROL PREPARED as MASTER-LT Additional required: LT2/KS1 prepared as SLAVE-LT and FMS/VMS or ETAMATIC with activated CO-Control	m1
CO/O ₂ -CONTROL PREPARED as SLAVE-LT Additional required: LT1/LS1 or LT2/LS2 prepared as MASTER-LT and FMS/VMS or ETAMATIC with activated CO-Control	m2
CO/O ₂ -MONITORING PREPARED as MASTER-LT Additional required: LT2/KS1 prepared as SLAVE-LT	m3
CO/O ₂ -MONITORING PREPARED as SLAVE-LT Additional required: LT1/LS1 or LT2/LS2 prepared as MASTER-LT	m4
CO/O ₂ -MONITORING CONNECTING O ₂ VIA EXTERNAL SYSTEM PREPARED as SLAVE-LT	m5
* (Default setting)	

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A 57 – CALCULATIONS	Selection
WITHOUT CALCULATIONS	n0*
CO ₂ -CALCULATIONS Analogue output for the CO ₂ -value must be ordered separately (attribute A18/A21/A24)	n1
O ₂ WET / DRY – CONVERSION	n2

* (Default setting)

A 60 – LANGUAGE SETTINGS	Selection
LANGUAGE GERMAN/ENGLISH	oD*
LANGUAGE GERMAN/FRENCH	oDF
LANGUAGE ENGLISH/GERMAN	oE
LANGUAGE ENGLISH/FRENCH	oEF
LANGUAGE FRENCH/ENGLISH	oFE

* (Default setting)

A 63 – SPECIAL CONFIGURATION	Selection
WITHOUT SPECIAL CONFIGURATION	z0*
INSTALLATION IN STAINLESS STEEL HOUSING LT2 WITHOUT WINDOW (dimensions 400x300x200 mm) only LT2 without display and without reference air pump	z3
INSTALLATION IN STAINLESS STEEL HOUSING WITH VIEWING DOOR (dimensions 400x300x200 mm) only LT2 with display and without reference air pump	z4
INSTALLATION IN STAINLESS STEEL HOUSING WITH VIEWING DOOR (dimensions 500x400x200 mm) only LT2 with reference air pump	z5
BUILT-IN IN EEX-HOUSING only LT2 in EX version	z6
CONFIGURATION BY ORDER	z8
PARAMETERS FIELD BUS CONNECTION PROFIBUS Additional required: Field bus module, order no. 663R040 – 1PB/LT PROFIBUS DP, CONNECTING at LT	z9
PARAMETERS FIELD BUS CONNECTION MODBUS Additional required: Field bus module, order no. 663R040 – 3MBK/LT MODBUS on terminals (RTU), CONNECTING at LT	z91

* (Default setting)

The information in this publication is subject to technical changes.

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