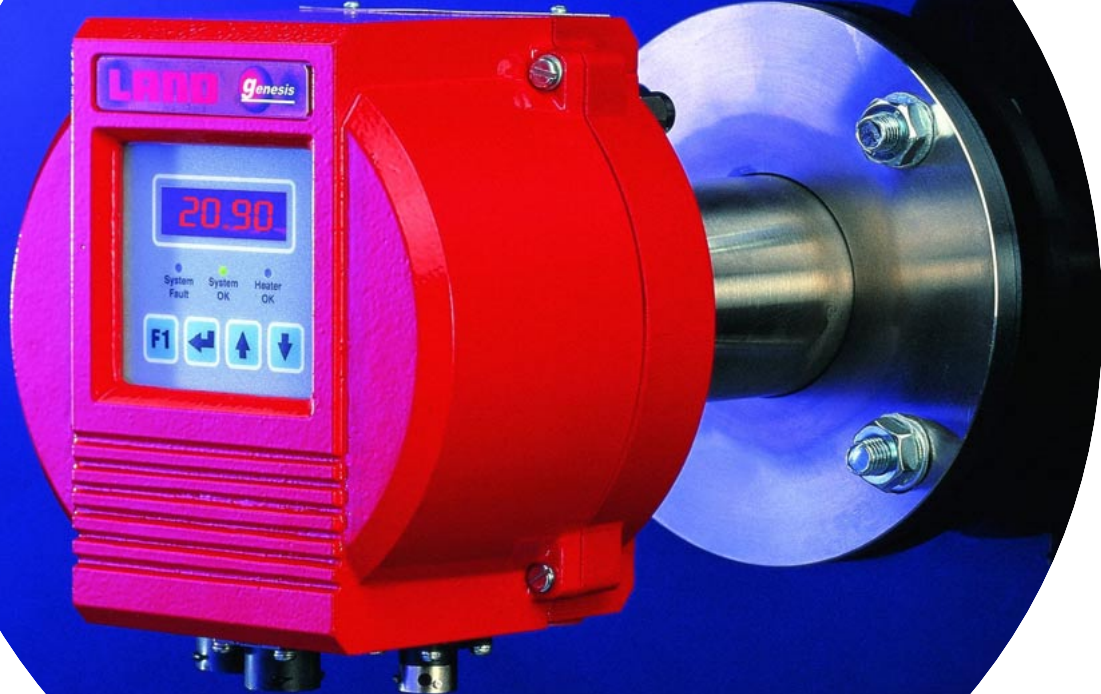


combustion

efficiency

monitoring

genesis



**flue gas
oxygen analyzer systems**

LAND
combustion

the total efficiency concept

remote display system



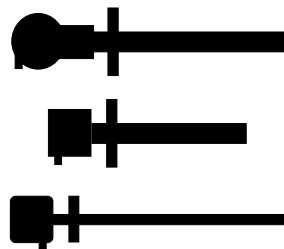
flue gas oxygen analyzers

Genesis is the new range of flue gas oxygen analysers developed by Land Combustion. The breakthrough 'stand-alone system' is the world's first truly, fully-integrated flue gas oxygen analyser. Unrivalled flexibility and ease-of-use enables the new genesis range to meet all measurement requirements.



The remote display system comprises the low temperature zirconia oxide measurement probe and the universal control unit. This system is used where the temperature of the flue gas is between 20 °C and 600 °C/68 °F and 1112 °F.

universal control unit



The universal control unit is fully compatible with all genesis oxygen probes. It provides remote control, operation and display option for the measurement probe. In addition, the universal control is fully compatible with existing zirconia sensor oxygen probes from most manufacturers.

- Probe mounted display interface for local control
- Full control, calibration and diagnostics information
- Simple, push-button user interface with LED display
- Automatic fault detection plus
- Modbus communications

high temperature system

the world's first fully-integrated stand-alone, flue gas oxygen analysis system

Genesis uniquely mounts the user interface onto the probe itself. This enables complete local control at the measurement location and reduces installation costs. Alternatively, the user interface can be detached and located for remote operation. Simple push-button operation combined with a clear LED display enable complete electronic control of the probe functions. Full setup and diagnostic information is accessible through the user interface.











The genesis range of high temperature measurement systems are designed for flue gas temperatures ranging between 600 °C and 1400 °C/1112 °F and 2552 °F.




The genesis range reflects the wide application of oxygen as a vital measurement parameter. Demanding environmental conditions no longer present measurement problems with the use of either high temperature or hazardous area systems.

hazardous area systems

Industries

-  Bio-fuel boilers
-  Package boilers
-  Power generation
-  Combined cycle gas turbine generators
-  Petrochemicals
-  Chemicals
-  Process industry
-  Pharmaceuticals

Applications

-  Combustion efficiency
-  Excess air measurement
-  Pollution control



The genesis range of hazardous area measurement systems are designed for flue gas temperatures ranging between 20 °C and 1400 °C/68 °F and 2552 °F. Genesis systems capably meet the unique measurement conditions demanded by such environments.

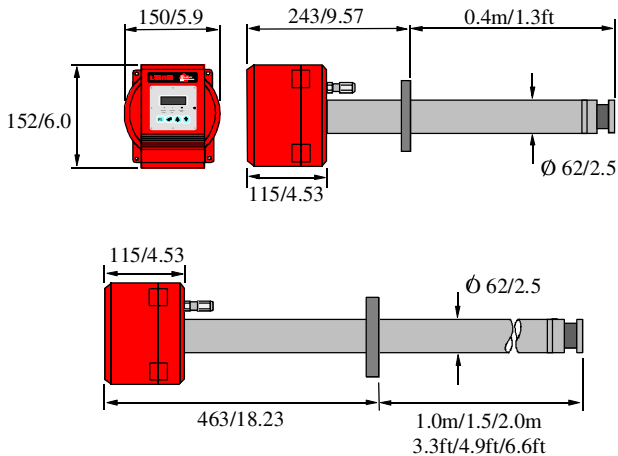
LAND
combustion

stand-alone system



Integrated Oxygen Analysis System

The g1200 is the world's first fully-integrated oxygen analysis system. The g1200 combines the measurement probe with the control unit into a single, fully integrated system.



All dimensions are given in millimetres/inches

Specifications - control/display

g1200 and g1220

Display Type:	Single-line 4 digit LED
Parameters:	O ₂ concentration Calibration Gas Cell Temperature Fault Messages Cell/Thermocouple info.
Outputs	
Analogue O/P:	Single channel isolated 0 to 10; 0 to 20; 2 to 20; 4 to 20mA menu selectable
Ranges:	Selectable range 0 to 5; 0 to 25% v/v O ₂
Damping:	1 to 100s selectable
Serial Output:	RS485 Modbus protocol
Alarm Relays:	Single pole changeover 2 A at 30 V a.c./d.c.
Alarms:	High/Low customer selectable System Fault Maintenance/Cal. in Progress
Fault Indication:	LED indication and error codes
Calibration:	Option to track or hold
Calibration Types:	Manual; *Automatic; Remote Trig.
Operating Temp:	-20 to +70 °C / -4 to +158 °F
Enclosure Rating:	IP65 /NEMA 4 Protection
Power Supply:	85 to 264 V a.c.; 48 to 62 Hz
Power Rating:	250 W
Electrical Safety:	Conforms to EN61010-1
EMC:	Conforms to EN50 081 & EN50082

**Requires optional Automatic Calibration Gas Control Unit*

g1220 only

Compatibility:	All Land Genesis type probes Other zirconia type oxygen probes
Probe Connections:	Probe heater control Sensor connection Cold Junction Sensor/Heater Thermocouple
Other Connections:	Cal. Trigger
Max. Distance to Probe:	300 m / 985 ft
EMC:	Conforms to EN 50 081, EN 50 082
Safety:	Conforms to EN61010-1
Dimensions:	130(l) x152(w) x153(h) mm/ 5.12(l) x6(w) x6.02(h) in
Weight:	2.7 kg/5.95 lb

Continuous product development may make it necessary to change these details without notice

remote display system

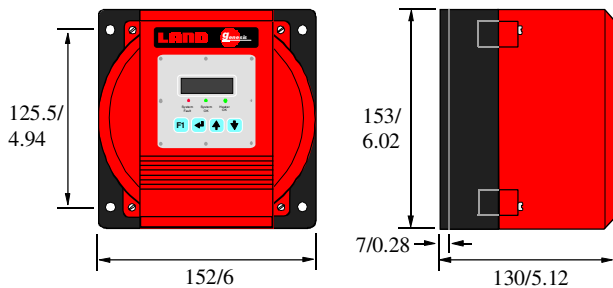
The remote display system comprises the standard measurement probe and the universal control unit.



Universal Control Unit

The universal control unit has identical functionality to the control module of the g1200.

- Free mounting for remote control
- Control, display and diagnostics information
- Simple user interface with LED display
- User programmable for maximum flexibility
- Automatic fault detection
- Modbus communications
- Small and compact
- IP65/NEMA 4 protection



All dimensions are given in millimetres/inches

Specifications - oxygen probe

g1200 and g1210

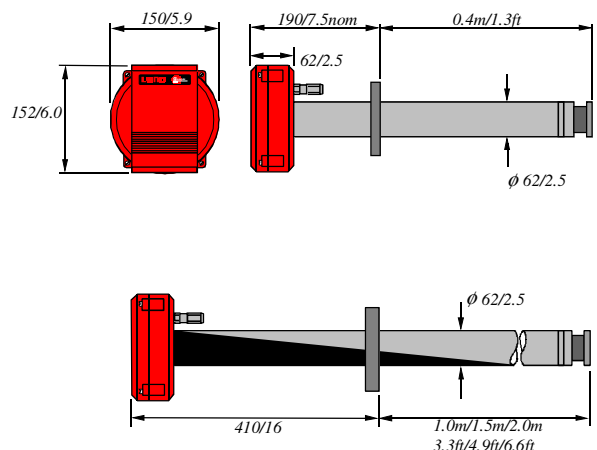
Measuring Range:	0 to 5, 0-25 % vol O ₂ selectable
Accuracy:	±1 % of full scale
Repeatability:	±0.5 % of full scale on analog outputs
Response Time:	90 % of full scale within 5 seconds
Measuring Method:	Zirconia oxide sensor
Flue Gas Temp:	0 to 600 °C/32 to 1112 °F
Insertion Length:	0.4 to 2.0 m/1.3 to 6.6 ft
Flue Gas Pressure:	Suitable for all normal positive or negative flue pressures ±20" wg
Probe Material:	316 Stainless steel
Probe Housing:	IP65/NEMA4 Protection
Lengths:	0.4/1.0/1.5/2.0 m/ 1.3/3.3/4.9/6.6 ft
Weight: (g1210)	6.8 to 13.1 kg/15 to 28.9 lb
Weight: (g1200)	8.8 to 15.1 kg/ 19.4 to 33.3 lb

Continuous product development may make it necessary to change these details without notice



zirconia oxide measurement probe

The g1210 measurement probe is capable of in-situ measurement in all combustion processes up to 600 °C/ 1112 °F. The probe has standard filters and optional flame arrestors for long term reliability and safety. The heater and thermocouple are both field replaceable.








All dimensions are given in millimetres/inches

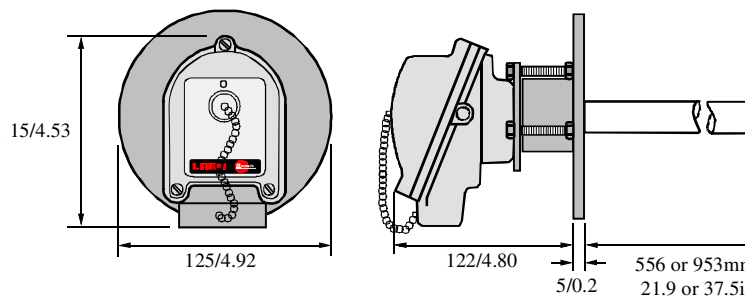
high temperature system

The high temperature system comprises the high temperature probe and the universal control unit.



High Temperature Oxygen Probe

-  Designed for 600° to 1400 °C/ 1100 to 2552 °F flue gas temperature range
-  Direct insertion, in-situ measurement
-  IP65/NEMA 4 protection
-  User programmable for maximum flexibility
-  Comprehensive diagnostics facility



Specifications - model g1230

Operating Temp. Ranges

Type R:	Pt/Pt 13% Rh BS4937 Pt 2 600 to 1250 °C (max 1400 °C) /1112 to 2282 °F (max 2552 °F)
Type K:	NiCr/NiAl BS4937 Pt4 600 to 900 °C /1112 to 1652 °F

Sheath Temperature Limits

Incoloy 800:	1000 °C / 1832 °F
Aluminium Porcelain:	1250 °C / 2282 °F
Recrystallised Alumina:	1400 °C / 2552 °F *

Response Time:	90 % of full scale within 5 seconds
----------------	----------------------------------------

Electrical Data

Probe Accuracy:	±1 % of full scale
Repeatability:	±0.5 % of full scale on analog outputs
System Accuracy:	±2 % of test gas reading when calibrated against a certified test gas

* Reduced probe life may result if probe is operated above
1250 °C / 2282 °F

Overall Dimensions

Probe Head:	683 mm or 1080 mm / 26.9 " or 42.52 "
-------------	------------------------------------------

Insertion Length:	556 mm or 953 mm / 21.9 " or 37.52 "
-------------------	-----------------------------------------

Weight:	2.5 kg (600 mm probe) - 5.51 lb (23.6 " probe) - 2.8 kg (1000 mm probe) - 6.2 lb (39.4 " probe)
---------	----------------------------------------------------------------------------------------------------------

Mechanical Data

Construction

Solid Electrolyte:	Stabilised zirconia oxide
Protective Sheath:	Aluminous porcelain, Incoloy 800 or Recrystallise Alumina

*Continuous product development may make it necessary to
change these details without notice*

All dimensions are given in millimetres/inches

hazardous area systems

The genesis range of hazardous area measurement systems are designed for flue gas temperatures ranging between 20 °C and 1400 °C/68 °F and 2552 °F. Genesis systems capably meet the unique measurement conditions demanded by explosive environments.

Hazardous systems for both low and high temperature flue gas are available.

For complete details request the dedicated information 'genesis hazardous area flue gas oxygen analysis systems' (ref. PDS 193)



automatic calibration gas control



Automatic Calibration Gas Flow/Control Unit

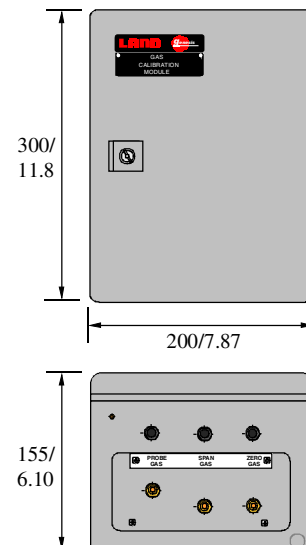
To help with compliance as well as reducing maintenance and increasing accuracy, this unit controls calibration gas to permit automatic calibration of the genesis probe.



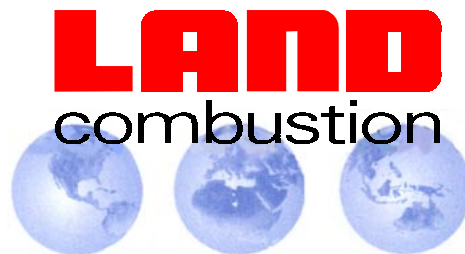
Specifications - model g1270

Gas Calibration Box

Dimensions:	300x200x155 mm/ 11.8x7.9x6.1 in (HxWxD)
Weight:	6 kg/13.2 lb
Operating Temp:	0 to 50 °C/32 to 122 °F
Enclosure Rating:	IP65/NEMA4
Power Supply:	110 V or 240 V a.c. 50-60 Hz 10 VA
Supply Tolerance:	-10 % +20 %
Gas Inlet Pressure:	1.7 to 2.0 bar/25-30 lbs in ²
Gas Outlet Flow:	3.0 litres/min. for g1200 & g1210 0.8 to 1.0 litres/min. for g1230
Pressure Switch:	1 bar/15 lbs in ² trip pressure
Slave Relays:	2- galvanically isolated changeover contacts



All dimensions are given in millimetres/inches



A Division of Land Instruments International

<http://www.landinst.com/comb/>

Land Combustion has a comprehensive range of Combustion and Environmental Monitoring Instrumentation.



Approval applies to products designed and manufactured in the UK

Further Information

U.K.

Stabley Lane,
Dronfield
S18 1DJ
Telephone: +44 (0) 1246 417691
Facsimile: +44 (0) 1246 290274
E-Mail: combustion.info@landinst.com

U.S.A.

10, Friends Lane
Newtown, PA 18940
Telephone: +1 215 504 8000
Facsimile: +1 215 504 0879
Toll Free: (in USA) 800 523 8989
E-Mail: combsales@landinstruments.net

Italy

Via dell'Industria, 2
20037 Paderno Dugnano, Milano
Telephone: +39 (0) 2 91 08 0020
Facsimile: +39 (0) 2 91 08 0014
E-Mail: combustion@landinst.it

France

7, Parc des Fontnelles
78870 Bailly
Telephone: +33 (0) 1 30 80 89 20
Facsimile: +33 (0) 1 30 80 89 21
E-Mail: combustion@landinst.fr

Poland

ul. Michałowskiego 5/2
31-126 Kraków
Telephone: +48 (0) 12 632 82 62
Facsimile: +48 (0) 12 632 24 74
E-Mail: landcomb@landinst.pl

Germany

Fixheider Str. 6
D-51381 Leverkusen
Telephone: +49 (0) 2171/7673-40
Facsimile: +49 (0) 2171/7673-9
E-Mail: combustion@landinst.de

Mexico

Paseo de la Reforma
No. 350 Piso 11
Col Juarez, D.F. CP 06600
Telephone: +52 5209 8438
Facsimile: +52 5209 8584
E-Mail: ventas@landinstruments.net