Hukseflux
Thermal Sensors

ALUSYS

HEAT FLUX SENSOR SYSTEM FOR USE IN ALUMINIUM SMELTERS / FURNACES

The ALUSYS has been designed for use in the study of aluminium smelters / furnaces. The system consists of a Measurement Control Unit and a number of heat flux / surface temperature sensors of type HF01 with magnet frame. These sensors can be mounted on the steel shell of the smelter.

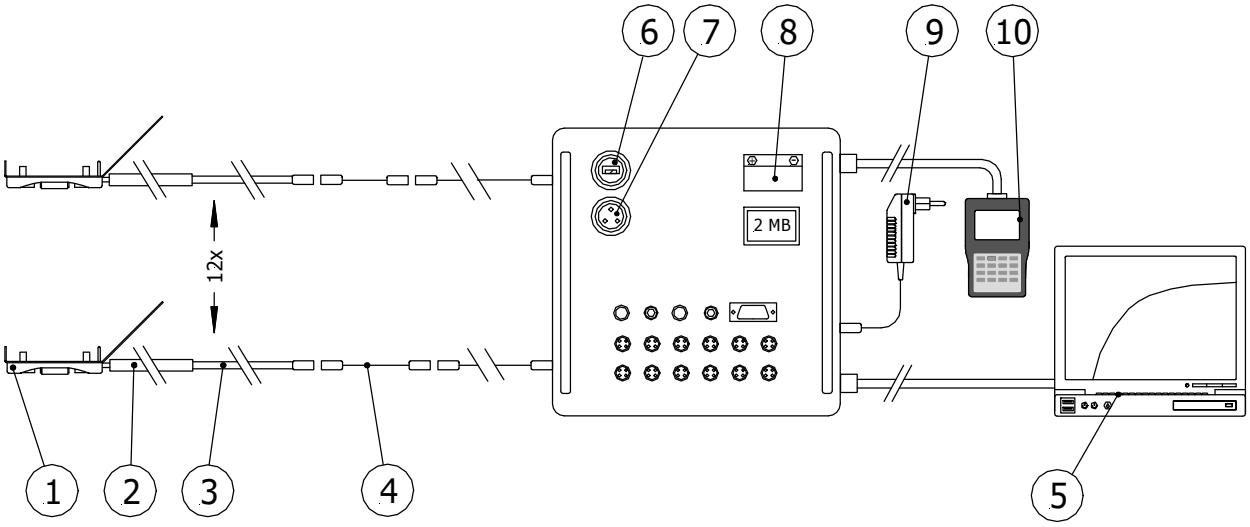

Figure 1 *Schematic overview of the measurement system;*
(1) HF01 sensor with magnet frame, (2) HF01 cable metal insulated with silicone sleeve. (3) HF01 cable PTFE. (4) PTFE extension cables with 2 connectors. (5) PC or laptop (not part of the system). (6) USB connector for connection to PC or laptop. (7) connector for charger. (8) battery. (9) system memory. (10) charger (110/220 VAC). (11) Keyboard Display (LCD Display). Items 6 to 11 are the MCU.

INTRODUCTION

ALUSYS system is used to perform measurement of heat fluxes and surface temperature at high temperatures. It is designed in particular for the study of aluminium smelters / furnaces.
The electronics can accept 12 or 3 sensors (using a multiplexer, depending on the model).
The assembled data are exported to a PC via USB. A PC, not part of the system, can be used for on-line graphical monitoring as well as data collection.
The system can operate for a limited time on a battery that is incorporated in the system box (at least 24 hours)
For all information on the HF01 sensors, the user should read brochure and manual for that sensor.
Advantages of HF01 relative to competing models are:

- robust, in particular at high temperatures
- fast response time, so reduced experiment time
- low thermal resistance; improved measurement accuracy
- one sensor model suitable for measurements on the shell as well as in the powder material

Reference users of HF01 are: Comalco, Alcan, Corus and Norsk Hydro.

SUGGESTED USE

- Studies of aluminium melting furnaces

MORE INFORMATION / OPTIONS

Modeling: for cell heat balance modeling tools: http://www.genisim.com

ALUSYS SPECIFICATIONS

Heat flux sensor:	HF01, see separate manual
Number of sensors:	12, optionally 3
Power requirements:	110 / 220 VAC, battery included in system for one day operation.
HF01 cable length:	0.9m metal and 3.5m PTFE
Extension cable length:	standard 15 m, with 2 connectors. Can be extended.
Storage capacity:	2MB
PC communication:	USB
Direct readout:	Heat flux and surface temperature on LCD Display (Keyboard Display)