

Acoustic Emission Sensors and Instrumentation



ATEX CERTIFIED SENSORS - MODELS IS2000, IS2200 AND IS2201 & INSTRUMENTATION

The **IS2000 series** of high performance, ATEX certified, acoustic emission transducers offer high sensitivity-low noise measuring capability for a wide range of industrial applications in designated hazardous areas. The transducers are fully encapsulated with polyurethane within a satin chromed thick walled brass housing. Mounting to the test specimen is achieved using a suitable silicon rubber or epoxy adhesives or alternatively with isolated magnetic clamps and silicon grease couplant. There are three basic models, each with its own temperature rating, which are available in four versions covering the frequency range from 70 to 650 kHz.

The transducers are designed to be used as part of a complete measurement chain incorporating an **ATEX certified IA2100** pre-amplifier and **IF410** interface unit, together with an **LD610** line driver as shown in fig 1. The IA2100 is both a 34 dB amplifier and a pulser driver. Therefore, calibration pulses can be introduced to the test specimen under the control of the monitoring system. The pre-amplifier is housed in an IP67, **HP100** enclosure and a preset filter module ensures the optimum response from each channel by matching the amplifier and transducer responses. The IF410 interface unit provides a power-limited supply to the pre-amplifier and is classified as 'associated electrical apparatus'. The LD610 is classified as 'unspecified safe area apparatus' and converts the high impedance output signal from the IF410 to a lower impedance output suitable for driving signals up to 500 m to a remote monitoring station.



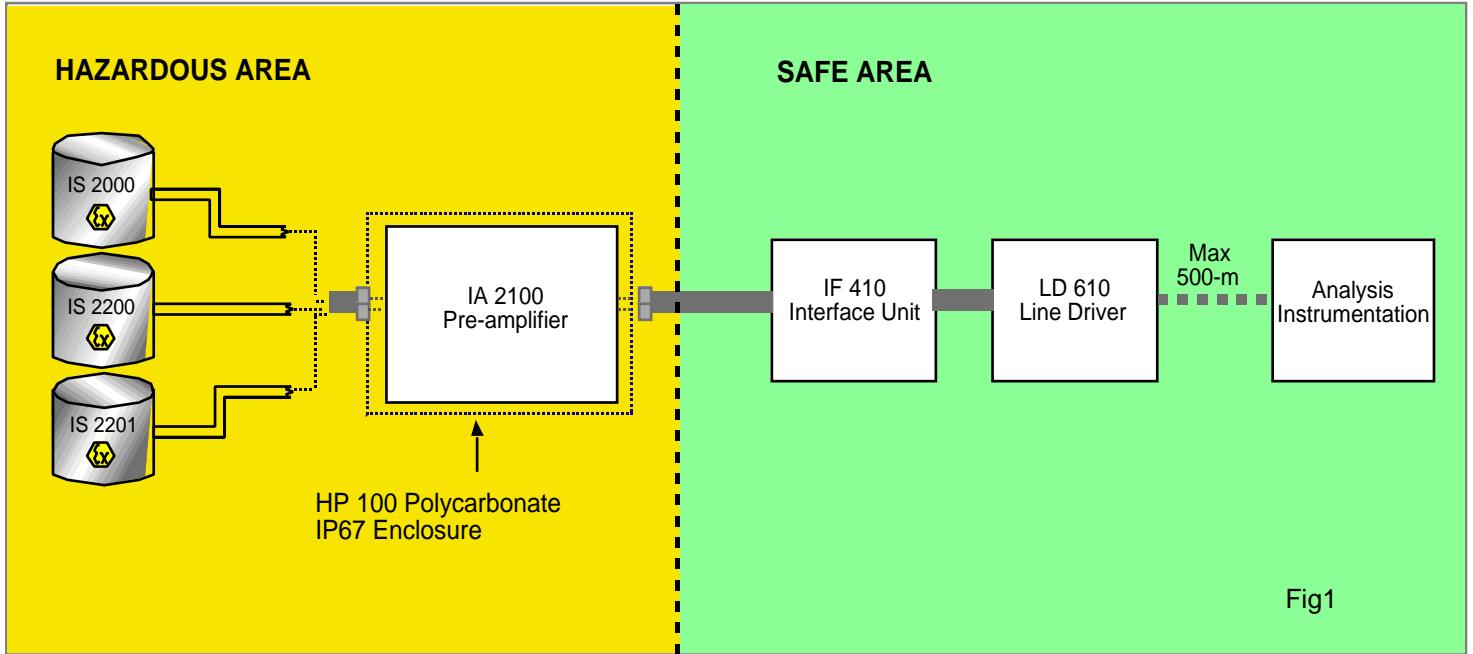
Specifications

Type :	Tuned resonant pzt piezoelectric	
Nominal Frequency:	IS2XXX-70	70 kHz
	IS2XXX-190	190 kHz
	IS2XXX-450	450 kHz
	IS2XXX-650	650 kHz
Sealing :	Epoxy potting	
Coupling Shoe :	Ceramic	
Couplant :	Silicon rubber/epoxy mounting adhesive or silicon grease	
Protection :	Diode/zener diode	
Dimensions :	34 mm dia x 30 mm high	
Weight :	150 g approx	

Model	ATEX Certification Details
IS2000:	Ex II 1 G EEx ia IIC T6 (-20°C T _a +80°C) (Baseefa03 ATEX0197)
IS2200:	Ex II 1 G EEx ia IIC T4 (-20°C T _a +115°C) (Baseefa03 ATEX0198)
IS2201:	Ex II 1 G EEx ia IIC T3 (-20°C T _a +190°C) (Baseefa03 ATEX0199)
IA2100:	Ex II 1 G EEx ia IIC T4 (-20°C T _a +70°C) (Baseefa03 ATEX0195X)
IF410:	Ex II (1) G [EEx ia] IIC (Baseefa03 ATEX0194)



SYSTEM SCHEMATIC



INSTRUMENTATION

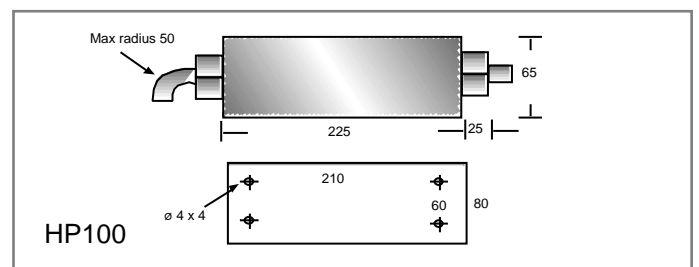
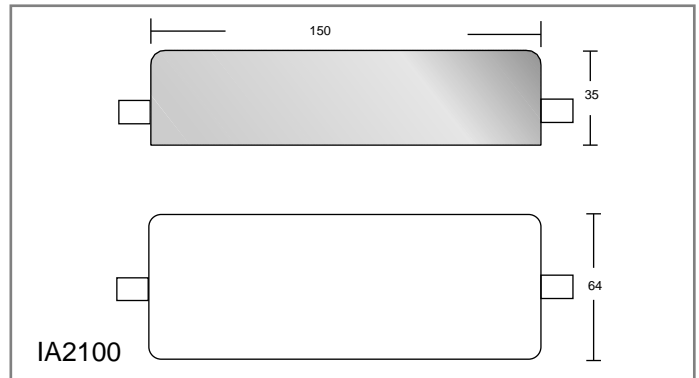


INSTRUMENTATION SPECIFICATIONS

PRE-AMPLIFIER - MODEL IA2100

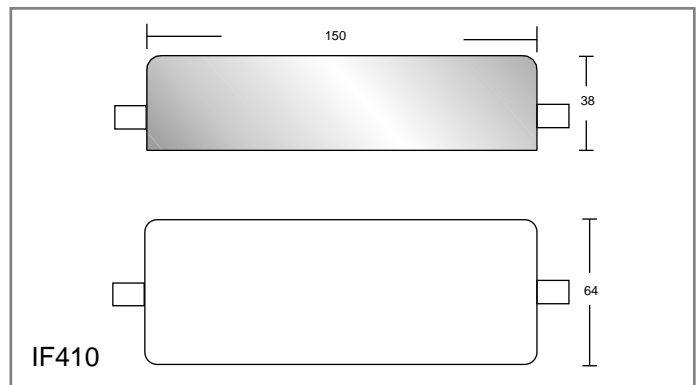
Type:	Combined Pre-amplifier and Pulser Driver
Gain :	34 dB
Input Impedance :	33 k /20 pF
Output to IF410 :	± 1.25 V/ μ s
Pulse Output to Transducer :	5V/ μ s
Noise (RTI) :	<3 μ V RMS
Sealing :	IP66 (When used with HP100)
Current Drain :	8 mA
Supply :	11.5 VDC (From IF410)
Protection :	Current limited supply Diode protection
Dimensions :	150 x 64 x 35 mm
Weight :	450 g approx

OUTLINE DIMENSIONS



INTERFACE UNIT - MODEL IF410

Gain :	6dB
Bandwidth :	50 kHz to 1 MHz
Input Impedance :	50
Output Impedance :	1500
Sealing :	IP20
Supply Voltage :	12 VDC (From LD600)
Supply Current :	50 mA
Dimensions :	150 x 64 x 38 mm



LINE DRIVER - MODEL LD610

Gain :	0 dB to -0.3 dB
Bandwidth :	50 kHz to 1 MHz
Input Impedance :	1500
Output :	± 2.5 V into 50
Sealing :	IP20
Supply Voltage :	28 VDC
Supply Current :	60 mA
Dimensions :	88 x 35 x 30 mm

