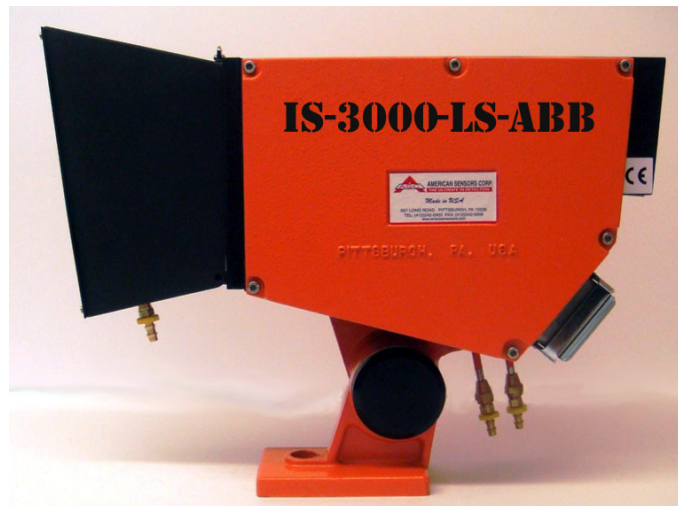


IS-3000-LS-ABB

INFRARED SCANNER

***NON-CONTACT, RELIABLE, PRECISE, LONG RANGE POSITIONING
FOR HOT OR COLD PRODUCTS***



FEATURES:

- **SIMULATES ORIGINAL ABB PULSE OUTPUT**
- **AUTOMATIC GAIN CONTROL**
- **ADJUSTABLE SCAN ANGLE FROM 0 to 45 DEGREES**
- **SET UP and DIAGNOSTICS via HAND-HELD TERMINAL or LAPTOP**

APPLICATIONS:

The **IS-3000** is the best-designed and precise scanning system for a broad range of measurement and position applications including:

- **Loop Control**
- **Strip Centering**
- **Cut-to-Length**
- **Crop Shear Optimization**
- **Width Control**
- **Strip Centering**



MADE IN THE USA

DESCRIPTION:

The IS-3000-LS-ABB is a non-contact scanning sensor for edge position of any hot product. The sensor detects infrared radiation emitted by the work piece, and provides an analog and/or digital voltage output proportional to the angular position of hot products within its field of view, even at temperatures as low as 200°C (392°F).

Its special design and rugged construction make- it ideally suited to the harsh environment found in heavy industry (basic steel, primary aluminum, hot or warm rolling of both ferrous and non-ferrous metals and alloys, mining, coke works).

The ABB Emulator Board converts the ASC standard IS-3000-LS scanner into the ABB QGLF 108, 110, 111- compatible device.

- It produces both **Reference** and **Measurement** pulses, as well as analog **Level** output proportional to the radiation from the product.
- The remote **Test** function is also implemented using the same 24V active high logic as in the original ABB device.
- The only difference is the Threshold level, which is programmable via the serial port while ABB QGLF 108, 110, 111 is using analog 4-20mA input.
- The ABB Emulator can emulate both 50 Hz. and 60 Hz. operation, setting the Reference pulse period accordingly to 20ms or 16.7ms
- The ABB Emulator provides all the features of the IS-3000-LS-ABB infrared scanner plus interface signals compatible with ABB QGLF 108, 110, 111 loop scanner.

The IS-3000-LS-ABB scanner is fully programmable via the RS-232 port using any ASCII terminal. For quick and easy installation and setup, ASC recommends an ASCII keypad, which can be conveniently powered from the sensor's RS-232 connector.

For applications requiring setup and data collection, any PC computer with a serial port and running a HyperTerminal program can be used.

SCANNING PRINCIPLE:

The field of view is vertically scanned by a rotating drum with 20 spherical faces that reflect infrared energy to the photodiode (PbS) (Figure 1). Position information is processed by the electronics, and converted to an analog output, which is proportional to the position of hot product within the field of view (Figure 2).

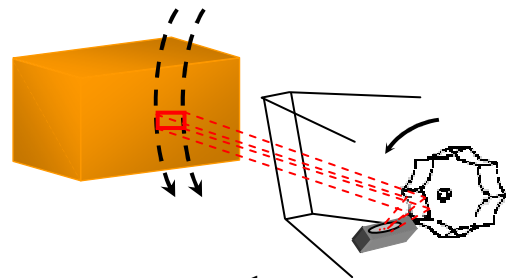


Figure 1

The time 'T' between the reference pulse and the measuring pulse is equivalent to the angle 'a' between the beginning of the scanned field and the position of the leading edge of the hot product. The sensor converts the time T into an analog voltage, which is proportional to the angle and independent of the scanning motor speed.

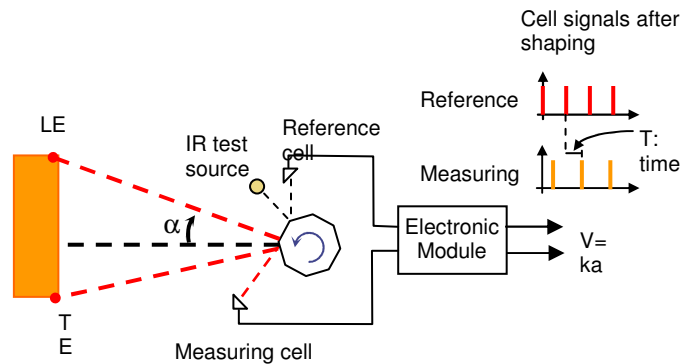
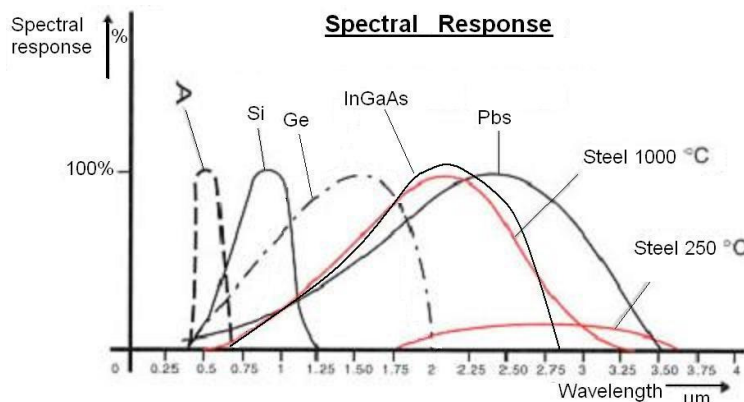


Figure 2

The IS-3000 uses a lead sulfide (PbS) photocell. A comparison of different photocells is shown below. Responsivity versus wavelength curves shows that lead sulfide has superior detection capabilities for hot metal. The output level is sufficient to provide reliable detection even with product temperatures as low as 200°C (392°F), and is continuous when the hot product is in the viewing field. These characteristics allow the lead sulfide photocell to provide reliable hot product detection, even through steam, dust and water.

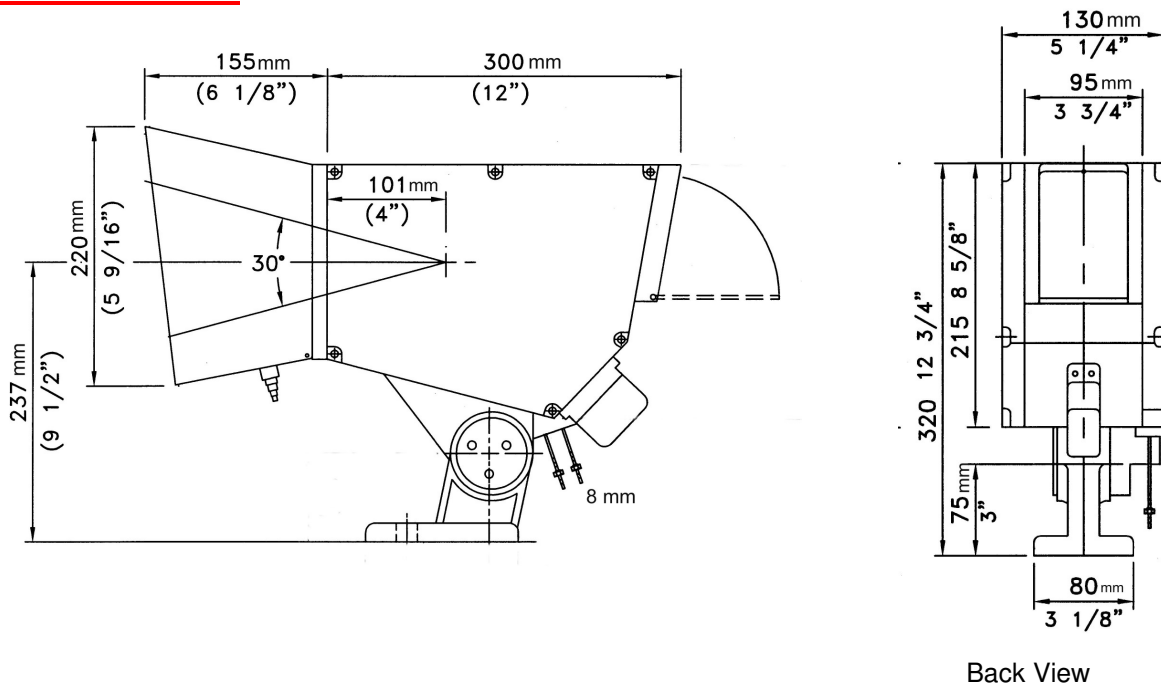


SPECIFICATIONS:

SYSTEM	
SENSITIVITY RANGE	Adjustable gain, 6 levels programmable via digital serial link
DETECTION THRESHOLD	Programmable via digital serial link
ENERGY	Available on analog and digital output
AUTOMATIC GAIN CONTROL	Enabled via digital link
PHOTOCELL OPTIONS	PbS
SCANNING ANGLE	Full range adjustable between 2° to 45°
TEMPERATURE RANGE	> 150 °C / 300 °F
SIGNALS	
DETECT RELAY	SPDT
RESPONSE TIME	< 7ms
CONTACTS RATING	10 Amp at 250 VAC
ABB PULSE OUTPUT	Simulates ABB pulse output
DETECT RELAY	Triggers on object detected and object detected within window Closing time: 7.5 ms / Opening time: 3 ms
DIGITAL OUTPUT RATE	40 ms to 1 sec
ANALOG OUTPUTS (rate 20ms to 1s)	Programmable to send selected measurement, 4-20 mA (standard), 0-20 mA, 0-10 VDC
FAULT RELAY	Triggers on power fault, 4-20mA fault, scanner fault, and over temperature limit
ABB EMULATOR SPECIFICATIONS:	
SCANNING RANGE	+/- 22 degrees
POSITION RESOLUTION	0.01 degreees
MATERIAL PULSE (MEAS)	24V differential output, 220 ohm impedance
REFERENCE PULSE (REF)	24V differential output, 220 ohm impedance
TEMPERATURE SIGNAL (LEVEL)	4-20mA, Optional 0-20mA
THRESHOLD LEVEL (MINTHR)	Programmable via RS232 port
ELECTRICAL	
POWER SUPPLY	100 to 240 VAC / 15 W (50-60 Hz) or 24 VDC (23v TO 26v)@ 200Ma Max.
POWER CONSUMPTION	20 VA or 10 VA for 24V
SHIELDED CABLE	2 Meter, high-temperature Teflon cable
CONNECTOR	Quick disconnect 15-pin HARTING plug with ground shield
SERIAL LINK DIGITAL COMMUNICATION	RS232

MECHANICAL	
LASER POSITIONING	650nm (red) Class 2 laser
POSITIONING / ALIGNMENT	Visible Laser pointing feature
HOUSING	Hermetically sealed cast metal housing rating: IP66 (NEMA 4 & NEMA 12)
WATER / AIR COOLING	Removable water / air-cooling jacket
PROTECTIVE HOOD	Hinged protective hood with positive pressure air purge: 4-16 liters/min at 2 bars (0.14 -0.56 ft3/min) at 29 PSI)
MOUNTING	Fully Adjustable foot mount swivel stand
TOTAL WEIGHT	Approx. 9 kg (20 Lbs)
OPERATING TEMPERATURE	-10°C (14°F) to 60°C (140° F) Above 60°C (140° F) auxiliary cooling is required: 1-2 bars at 1-2 liters/min
STORAGE TEMPERATURE	-20°C (-4°F) to 70°C (158° F)
INSIDE TEMPERATURE	Alarm (fail safe)

DIMENSIONS:



PRODUCT SELECTION:

	Version	Electrical	Input Voltage	Available Analog Output
IS-3000 -	• LS Loop Scanner	• ABB compatible LS ABB Pulse Output	• DC: 24 V	• 4.20 (4-20 mA)
			• AC: 100 to 240 V	• 0.20 (0-20 mA)
				• 0.10 (0-10V)

OPTIONS & ACCESSORIES:

Options	Stand	Connection Box	Radiant Bar	Keypad	Kevlar Jacket	Bluetooth
	• HS500	• CB3000	• RB500	• KP3000	• KHC500	• PDA-3000-PC
			• RB3000			

Example Model Number: *IS3000-LS-ABB -AC*

*Direct Replacement, Please specify:

MAKE MODEL WIRING USED - Power Supply:

- Outputs:

For Assistance, please call ASC Technical Center (1) 412 242 5903
 Email: tech@americansensors.com