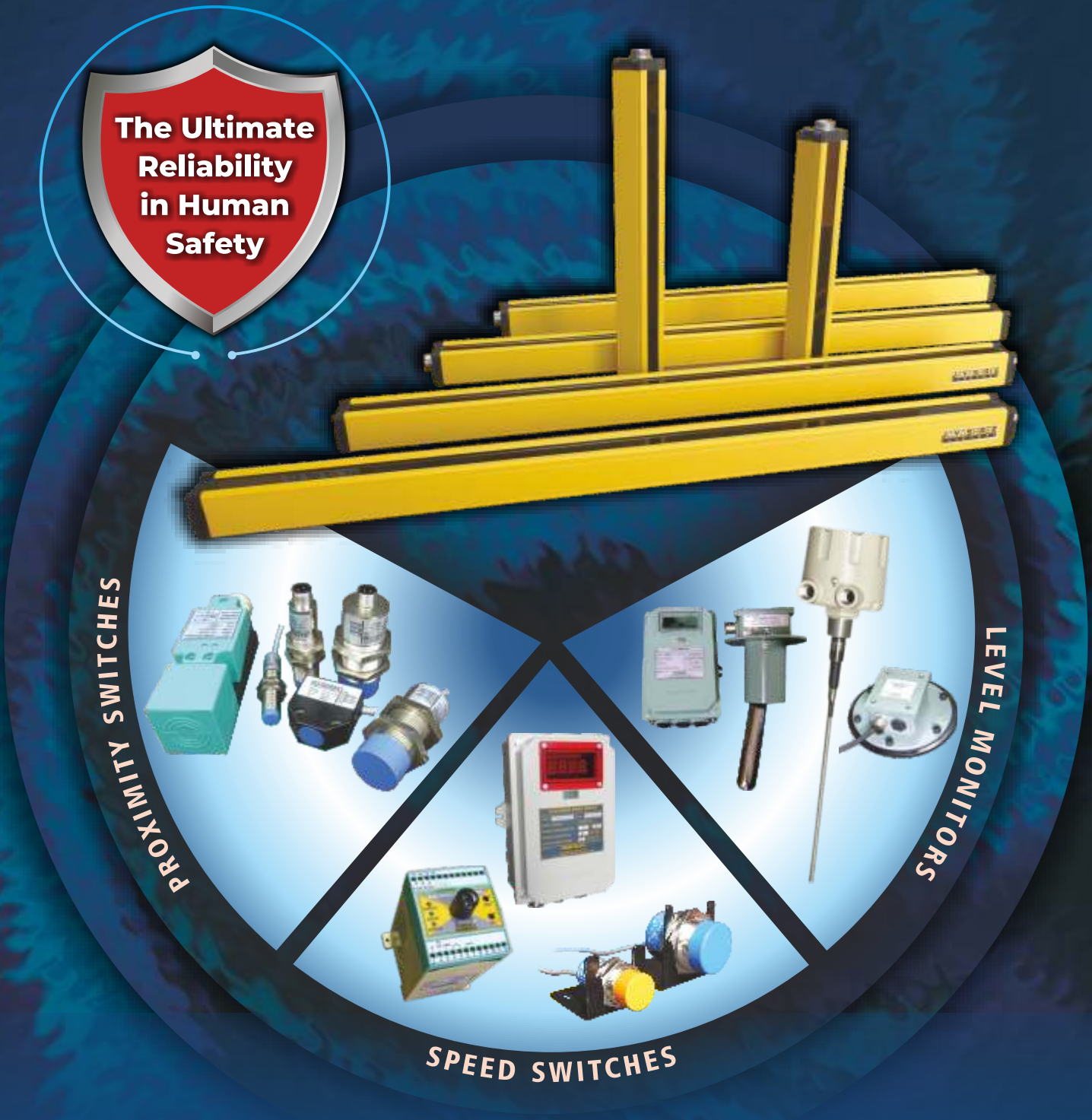
JAYASHREE GROUP
SPEED POSITION POWER

JAYASHREE ELECTRON

SAFE MASTER

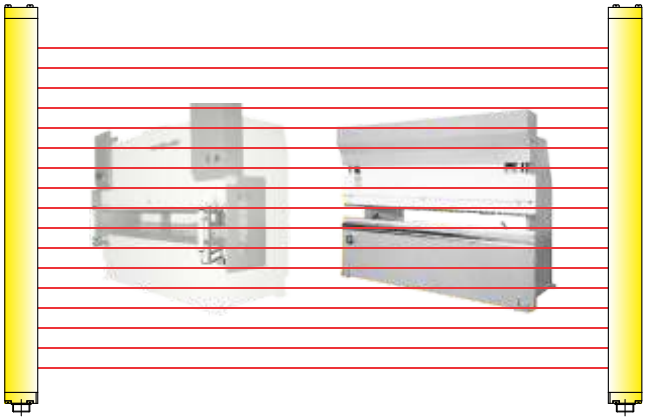
The Ultimate Reliability in Human Safety



MAKING IN INDIA SINCE 1982

Technical Bulletin 6057-02

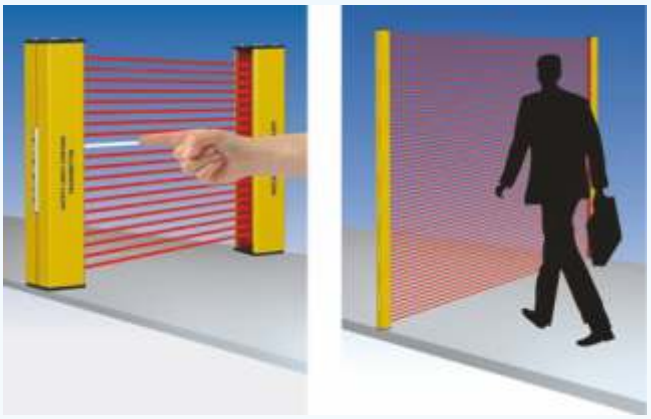
THE ULTIMATE **RELIABILITY** IN **HUMAN SAFETY**



INTRODUCTION

Human safety optical barriers, or light curtains, are critical devices used to protect personnel while operating any hazardous machinery. Infrared beams are used to sense unwanted entry of human or any other object in hazardous area and it gives a stop alarm signal to the machine.

JAYASHREE Electron's safety light curtains uses high–resolution and high speed scanning infrared beams to detect presence of objects and to give a signal. The units are available in different sensing Heights / Gaps / Pitch to meet machine size and safety level. Built-in self-diagnostics design assures a fail-safe protection.



CONSTRUCTION

Human safety optical barriers consist of an multi beam IR Transmitter and a Receiver column housed in a robust, IP65 rated enclosures made from Aluminum or industrial-grade plastic. The transmitter projects a series of synchronized infrared beams, which are precisely aligned with photo receivers in the receiver column using integrated optical lenses. These units are designed to with stand industrial environments, offering resistance to dust, vibration, and moisture. Adjustable mounting brackets allow ease and flexibility of installation and alignment. Electrical connections are made via connectors that provide easy integration with Extended Units. Wiring options include 2/3-wire or 3/4-wire configurations without potential free output contacts.

TYPICAL APPLICATION

- **Automated Assembly Lines :** Safeguard operators working near robotic arms or moving parts.
- **Passenger Elevators :** Ensure passenger safety by detecting obstructions at elevator doors and preventing closure or movement until cleared.
- **Packaging Machinery :** Stop operations if hands or objects enter danger zones.
- **Conveyor Systems :** Detect human presence to prevent entrapment or collision.
- **Heavy Press Tools/Cutters :** Prevent injuries by halting machine operation if hands or objects are detected in the cutting or pressing area.
- **Entry Restriction in Hazardous Areas :** Restrict unauthorized access to dangerous zones by triggering alarms or system shutdowns when breached.

PRINCIPLE OF OPERATION

Human safety optical barriers operate on the principle of photoelectric sensing. The system consists of an emitter that transmits parallel infrared beams to a receiver. When all beams are uninterrupted, the multi beam coloum and the unit gives a healthy-state output signal. If any beam is blocked-such as by the intrusion of a hand or body part—the receiver detects the interruption and sends a signal to stop the machinery immediately. This real-time detection ensures a fail-safe response to prevent accidents, meeting stringent safety standards like IEC 61496 and ISO 13849-1

GENERAL SPECIFICATIONS

Beam Pitch : 10mm/30mm/50mm

Dimensions : 30mm (W) x 30mm (H)

Protective Height Range : 150 mm to 1800 mm

Operating Range : Up to 5 meters

Response Time : < 20 ms

Supply Voltage : 24VDC/110VAC/240VAC 50Hz, ±10%

Output Type : Solid State / Potential Free Relay.

Connection Type : M12 4-pin male – Emitter / M12 5-pin female – Receiver with cable length of 2m,5m,10m

Indication LED'S : **Green LED – Power ON**
Red LED - Beam Interrupted

Protection Grade : IP-65 for Receiver & Transmitter

Housing Material : Aluminium

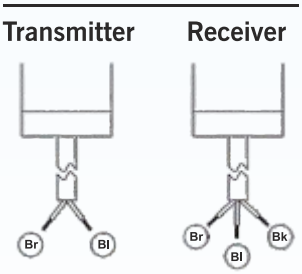
Temperature Range : -25°C to +70°C

Mounting : Adjustable stainless-steel brackets (vertical or horizontal)

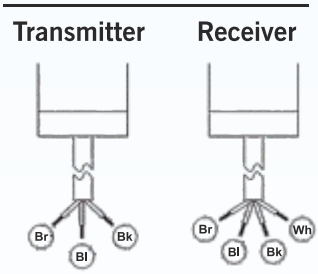
Standards Reference : IEC 61496, ISO 13849-1

CONNECTION DETAILS

2 / 3 WIRE



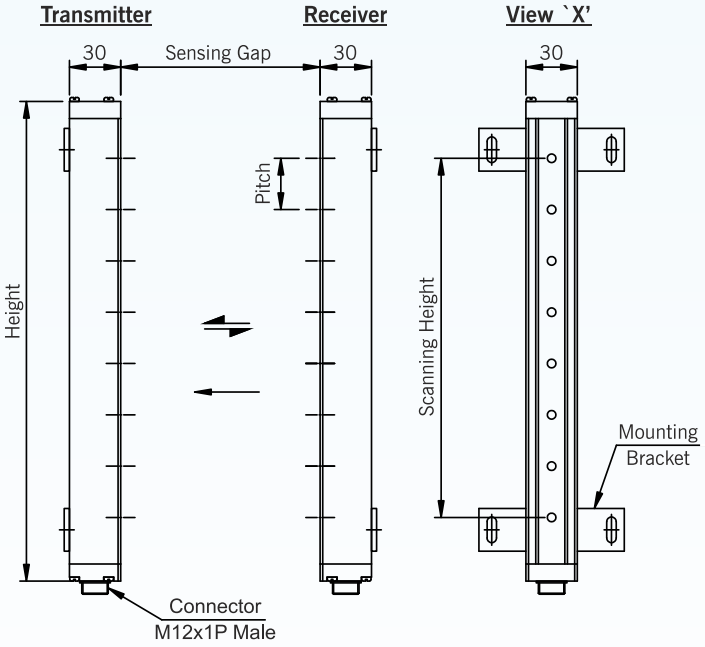
3 / 4 WIRE



INSTALLATION

Safety optical barriers should be installed with Emitter and Receiver units facing each other at the probable hazardous zone using the provided adjustable mounting brackets. Ensure proper alignment between the emitter and receiver, with a clear line of sight for all beams. Mount the units at a appropriate height based on the detection type (e.g., finger, hand, or body protection). Connect to a 24V DC power supply and interface with a safety relay or controller. Avoid reflective surfaces and ensure stable, vibration-free positioning. Test beam interruption response and system diagnostics after installation for reliable operation.

DIMENSION DETAILS



ORDERING INFORMATION

OBS 6057 08 A CA 11 A23

BASIC SERIES

NO. OF BEAMS
8 / 12 / 16 / 24

BEAM PITCH
A - 10mm
B - 30mm
C - 50mm

SYNCHRONIZATION TYPE
A23T- 2 Wire / R- 3 Wire
A34T- 3 Wire / R- 4 Wire

OUTPUT CONTACTS
11:- 1NO + 1NC
22:- 2NO + 2NC

MONITORING UNIT ENCLOSURE
XX - Nil
CA - Cast Aluminium IP-66
PL - Plastic IP-30

OTHER PRODUCTS

Jayashree Electron Pvt. Ltd. offers a diverse range of **Industrial Automation** and **Safety Products** designed to enhance operational efficiency and ensure workplace safety.

- **PROXIMITY SWITCHES :**
  Inductive, Capacitive, Infra Red and Magnetic non-contact position/speed sensors for precise monitoring in automation systems.
- **CONVEYOR SAFETY & MONITORING DEVICES :**
  Integrated safety devices including zero speed switches, slip monitors, belt tear switches, and belt alignment monitors ensure comprehensive conveyor system protection by detecting belt misalignment, slippage, stoppage, and tears minimizing downtime and preventing equipment damage.
- **MOTOR CONTROL SOLUTIONS :**
  Soft Starters , HFSR series reactors type for LT/MV motors to reduce inrush current, No harmonics enhance part life motor Winding/Bearing/Transmission.
- **LEVEL SENSORS :**
  RF Capacitance, Ultrasonic, Rotary Paddle and Vibratory rod Type Sensors for Accurate and Reliable Level Detection Across Various Applications.
- **ELECTRONIC BRAKE :**
  Advanced Dynamic Braking Solutions for Electric Motors, ensuring quick and reduces wear & tear and enhances life of motor.
- **SEQUENCE TIMER :**
  Programmable timing devices that manage sequential operations in automation systems ideal for controlling multi-step processes with precision and flexibility.

JAYASHREE ELECTRON PVT. LTD.

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