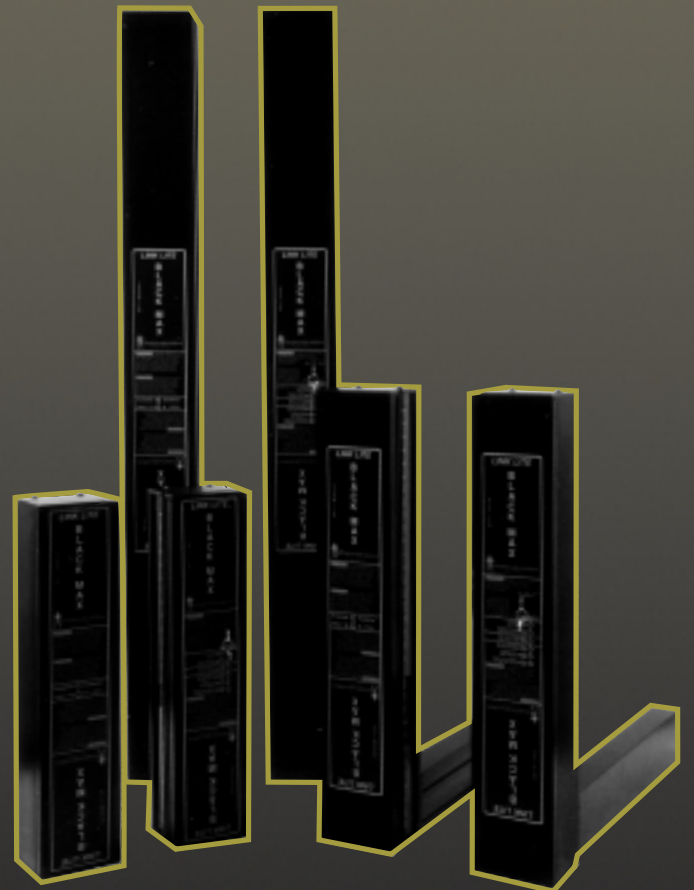


LINK LITE
BLACK MAX[®]
infrared safety light curtains



BY LINK SYSTEMS



A Superior Design

Black Max Infrared Light Curtains use unique sensing circuitry and diversely redundant microprocessor logic electronics to meet or exceed all OSHA and ANSI construction requirements for control reliability and to provide unmatched operational performance. The design of the Black Max also solves many nuisance and safety problems not addressed directly by ANSI and OSHA that are common to many infrared light curtains on the market.

Crosstalk Detection: Each Black Max light curtain can differentiate "crosstalk" light pulses from sources other than its transmitter, including other light curtain transmitters located on nearby machines. Most infrared light curtains can't do this, and can be unsafely "fooled" into not providing a stop signal when their own transmitter light pulses are blocked if crosstalk can occur. Black Max receiver units provide a stop signal and light their "Bus Status" indicator light if crosstalk interference occurs.

Selectable Transmitter Power: Black Max transmitter units provide switch settings to select transmitter power levels appropriate for the separation distance between the transmitter and receiver units. Other infrared light curtains provide only one power level - that power necessary for the light curtain to operate at the maximum specified distance between transmitter and receiver. The reduced power levels possible with Black Max applications that require shorter than maximum allowed separation distances greatly



enhances the life of the infrared light emitting diodes used in the transmitter and also reduces the possibility of crosstalk to light curtains on other nearby machines.

Ambient Light Rejection: No other light curtain rejects ambient light from sunlight, interior plant lighting, weld flash, strobe lights and other sources like the Black Max. Some infrared light curtain manufacturers specify that their units will operate with 10,000 lux of steady ambient light at a 5 degree angle of incidence, depending on receiver focusing to reduce the possibility of seeing ambient light sources. The Black Max can operate with 5000 lux directly incident (0 degrees) at higher power levels and far more than 10,000 lux at a 5 degree angle of incidence. And, the special sensing and scanning circuitry of the Black Max rejects weld flash, strobe lights, and EMI without sacrificing response time, as is the case with many light curtains. Response times of Black Max units, including output relay response time, range from 12.5ms for 18" high units to 20ms for 48" high units.

Safeguarding Considerations

A light curtain performs the simple function of a light activated switch that can be used to provide a signal as to whether an object or person is in the sensing field. It cannot, by itself, provide personnel safety enhancement. See OSHA, ANSI and Link Lite Black Max manual for application, installation, adjustment and use requirements.

No light curtain will protect personnel from abnormal hazardous machine action(s) caused by failure, wear, or misadjustment of electrical, mechanical, hydraulic or pneumatic components of the machine upon which it is installed. Proper preventative maintenance is necessary to enhance the protection that light curtains provide.



Remote Extensions

Black Max remote segments are housed in separate enclosures from the main Black Max units. They can be used to create "L" shaped or other sensing field shapes when combined with the main transmitter and receiver units. Remote segments are extremely helpful when the safety distance requirements place the primary sensing field out so as to allow a person to stand between the light and the hazard. The remote section will detect that person standing inside the sensing field. The remote sensors are on 3" beam centers and are not to be used as your primary sensing field.



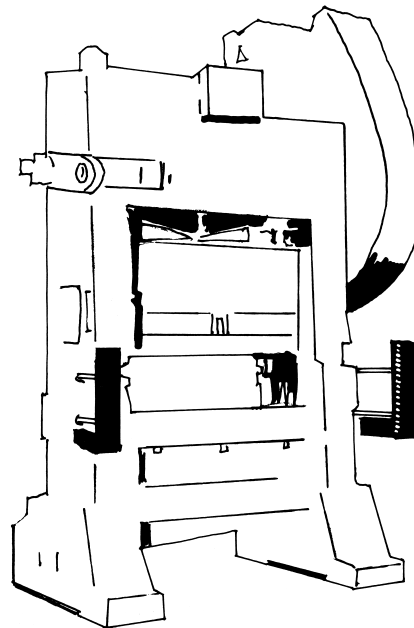
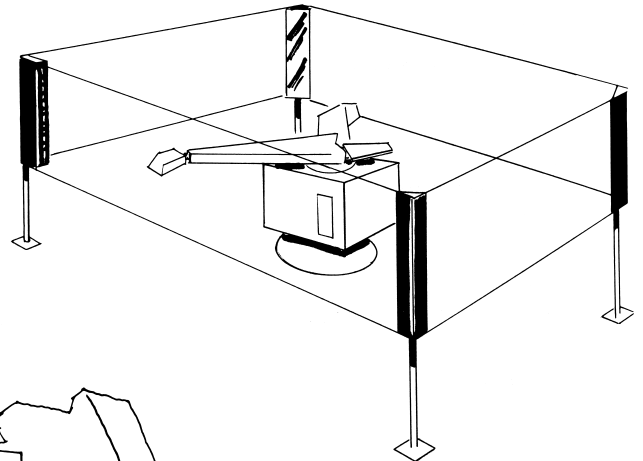
Please contact your local Link representative or contact Link directly for your remote segment applications

FEATURES

- Scanning range up to 100 ft.
- 2 box system / compact design
- Minimum object sensitivity of .95" for standard range units (50')
- Minimum object sensitivity of 1.25" for long range units (100')
- Response time of less than 20 milliseconds
- Vari-blank (floating) is standard
- Automatic fixed blanking is standard
- Channels automatically unblank when not blocked
- Individual channel red LED's indicate state of each channel through front lens
- Clearly labeled "Blanking Covers" provided for fixed blanking
- Diverse redundant microprocessor logic design
- Phototransistors with ambient light rejection circuitry
- Meets or exceeds OSHA and ANSI construction requirements for presence sensing devices
- Available in heights from 18" to 48" on 6" increments
- Optional extension models for horizontal or supplemental guarding available
- Perimeter guarding applications available from 36" to 72" in 12" increments
- Light source of infrared emitting diodes
- Heavy duty extruded aluminum construction
- 3/4" beam spacing
- Self-checking circuitry
- Selectable power levels

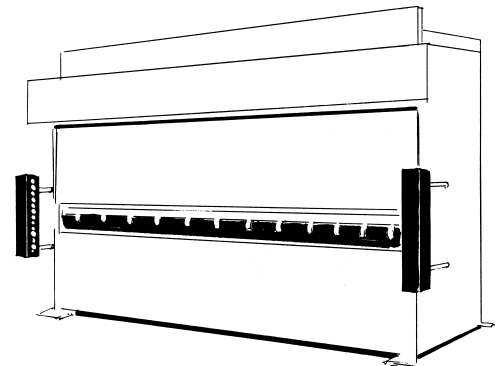
APPLICATIONS

**PERIMETER
GUARDING
OF
ROBOT**



**STRAIGHT SIDE
PRESS WITH
REMOTE SEGMENTS**

**PRESS BRAKE
USING
VARI-BLANK**



Never use a Black Max on a machine controlled by a PLC without first consulting Link Systems to determine whether the Black Max should be used and how it should be connected to the control.

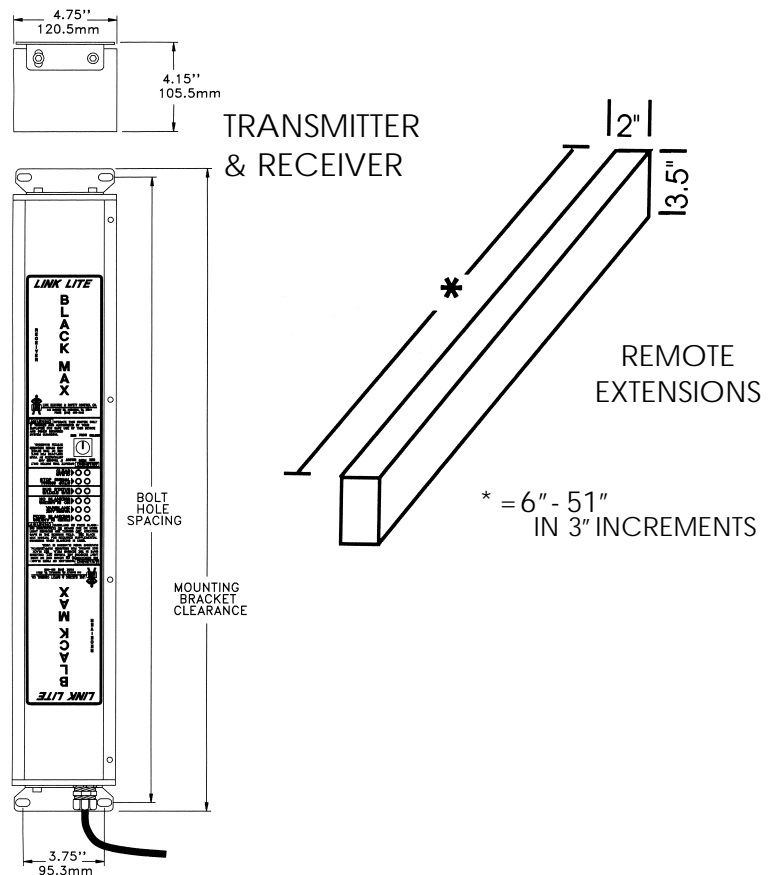
BENEFITS

- Minimizes nuisance shutdowns due to ambient light, strobe lights and weld flashes
- Maximizes work area visibility
- Easy to install and align
- Allows easy access to scrap removal and die change-overs
- Helps comply with OSHA regulations
- Provides flexibility by offering vari-blank and fixed blanking as standard
- Quick response time combined with small M.O.S. allows for close mounting of the lite
- Single failure or fault will cause the system to send a signal to the press control to stop the machine
- Remote segments can be used to detect a person standing inside the primary sensing field

Link Systems' engineers and representatives will provide assistance upon request in evaluating your machine tool as to compliance with control requirements. Link Systems can provide control systems for part revolution mechanical power presses and mechanical press brakes, and interface systems for many hydraulic presses and press brakes that meet OSHA and ANSI requirements for the use of the Link Lite Black Max as a safeguarding device.

SPECIFICATIONS

NOMINAL LENGTH	18"	24"	30"	36"	42"	48"
SENSING FIELD LENGTH	18.75"	24.75"	30.75"	36.75"	42.75"	48.75"
ENCLOSURE LENGTH	20.5"	26.5"	32.5"	38.5"	44.5"	50.5"
OVERALL LENGTH W/ MTG. BRACKETS	23"	29"	35"	41"	47"	53"
BOLT HOLE SPACING	22.2"	28.2"	34.2"	40.2"	46.2"	52.2"
MAXIMUM RESPONSE TIME (ms)	12.5	14	15.5	17	18.5	20
WT. IN LBS. - TRANSMITTER	13.4	16.4	19.3	22.8	25.3	28.2
WT. IN LBS. - RECEIVER	11.6	14.5	19.3	20.2	23.0	25.9
MIN. OBJ. SENS. 50'	.95"	.95"	.95"	.95"	.95"	.95"
MIN.OBJ. SENS. 100'	1.25"	1.25"	1.25"	1.25"	1.25"	1.25"



* Perimeter applications available in sizes of 36" to 72" in 12" increments on 1-1/2" beam centers in scan distances of 100 feet.

* Remote extensions for horizontal guarding are available in sizes from 6" to 51" in 3" increments on 3" beam centers in scan distances of 50 or 100 feet.

ACCESSORIES

FLOOR MOUNTS



MIRRORS



Link Systems designs, develops and manufactures electronic controls, monitors and safety devices for the metal stamping and fabrication industry. We are an engineering company committed to providing practical solutions to our customers' needs for automation, productivity, quality, safety and shop floor information storage and retrieval. □ Our product line is flexible enough to provide a specific control or monitoring function or to provide integrated systems for your presses. Link supplies products and systems to both the retrofit and OEM markets. We also provide engineering consultation, installation and repair services for our systems. □ Our control products provide the latest reliable technology to increase safety and productivity and reduce set-up time. □ Our light curtain safety devices protect against hazards while allowing accessibility and visibility for the operator. □ Our monitoring systems can help prevent machine and tooling damage and reduce production of scrap parts.



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