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MiniProtect Light Curtains

- Resolution: 30 mm (1.18 in.)
- Range: 15 m (49 ft.)
- Protective heights: 147 to 1470 mm (5.7 to 57.9 in.)
- Compact size — 31 x 32 mm (1.22 x 1.26 in.)
- Two-box design, no separate control box; no cable between transmitter and receiver
- Type 2 ESPE per IEC 61496-1, -2

Type 2 vs. Type 4 Light Curtains

See the article "Type 2 vs. Type 4 Light Curtains" in the Expert Area Section of this catalog on page A49.



Specifications

Performance	
Protective Height:	147 to 1470 mm (5.7 to 57.9 in.)
Operating Range:	0.3 to 15 m (1 to 49 ft.)
Minimum Object Resolution:	30 mm (1.18 in.)
Response Time:	See table at right
Effective Aperture Angle:	±5° per the requirements of IEC 61496-1, -2 for a Type 2 ESPE
Input Voltage (Vin):	24 VDC ± 20%
Input Power:	3.4 watts (without load on the outputs)
Safety Output Ratings:	Two PNP outputs sourcing 500 mA max @ Vin (see note 1). Short circuit protected.
Power Supply:	24 VDC ± 20%. The rating depends on the current requirements of the loads attached to the outputs (see note 2). The power supply must meet the requirements of IEC 60204-1 and 61496-1. STI part number 42992 or equivalent.
Start/Restart N.C. Input:	20 mA @ 24 VDC
Light Source:	GaAlAs Light Emitting Diode, 880 nm
Mechanical	
Cable Length Extension Cables:	Available in lengths of 3, 10 and 30 m
Construction:	Polyurethane powder-painted aluminum
Connections:	M12 4-pole connector for transmitter; M12 5-pole connector for receiver
Environmental	
Temperature:	0 to 55°C (32 to 131°F)
Relative Humidity:	95% maximum, non-condensing
Enclosure Rating:	IP65
Indicator Lights:	Transmitter – Power applied, interlock; Receiver – Machine run, machine stop, top align, bottom align
Vibration:	10 to 55 Hz on all three axis
Shock:	10 g for 0.16 second; 1,000 shocks for each axis
Approvals	
ESPE Type 4 (IEC 61496-1/ -2) Category 2 / PL c (EN ISO 13849-1) SIL2 / SIL2 CL2 (IEC 61508 / EN 62061) UL508, UL1998, CAN/CSA-C22.2 No. 14, CAN/CSA-C22.2 No. 0.8, CAN/CSA-C22.2 No 0, CAN/CSA-C22.2 No 205	



Model	Response Time
MP21Y-30-150	14 ms
MP21Y-30-300	15 ms
MP21Y-30-450	16 ms
MP21Y-30-600	17 ms
MP21Y-30-750	18 ms
MP21Y-30-900	19 ms
MP21Y-30-1050	20 ms
MP21Y-30-1200	22 ms
MP21Y-30-1350	23 ms
MP21Y-30-1500	24 ms

Specifications are subject to change without notice.

Note 1: Voltage available at the outputs is equal to Vin - 1.0 VDC.

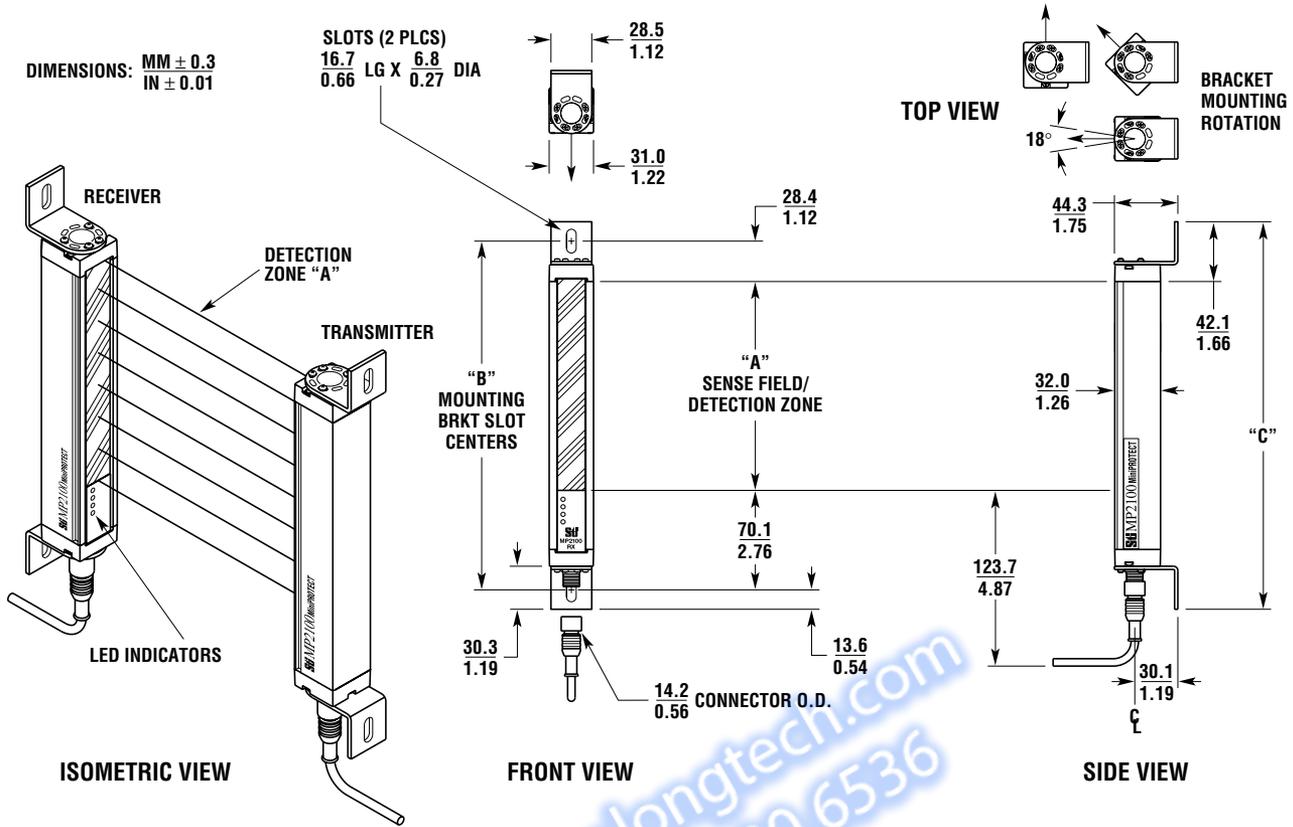
Note 2: Total system current requirement is the sum of the transmitter 50 mA and receiver 1.09 A max. (Receiver 90 mA + OSSD1 load + OSSD2 load)

WARNING!

DO NOT use this Protective Light Curtain where a risk assessment has determined that control reliability is required, such as for hazardous machinery. Use only for equipment where the worst-case injury from an accident can be remedied by simple first aid, as determined by a thorough risk assessment.
DO NOT use unless the device is installed, tested, and inspected according to Omron's Installation Manual. This protective device meets the Type 2 requirements of IEC 61496. It DOES NOT meet U.S. OSHA 1910.217, ANSI B11, or ANSI/RIA R15.06 requirements.
If you are unsure of which model of light curtain to choose, contact OMRON Automation and Safety. Failure to comply with this warning could result in serious injury or death.

Dimensions

(mm/in.)



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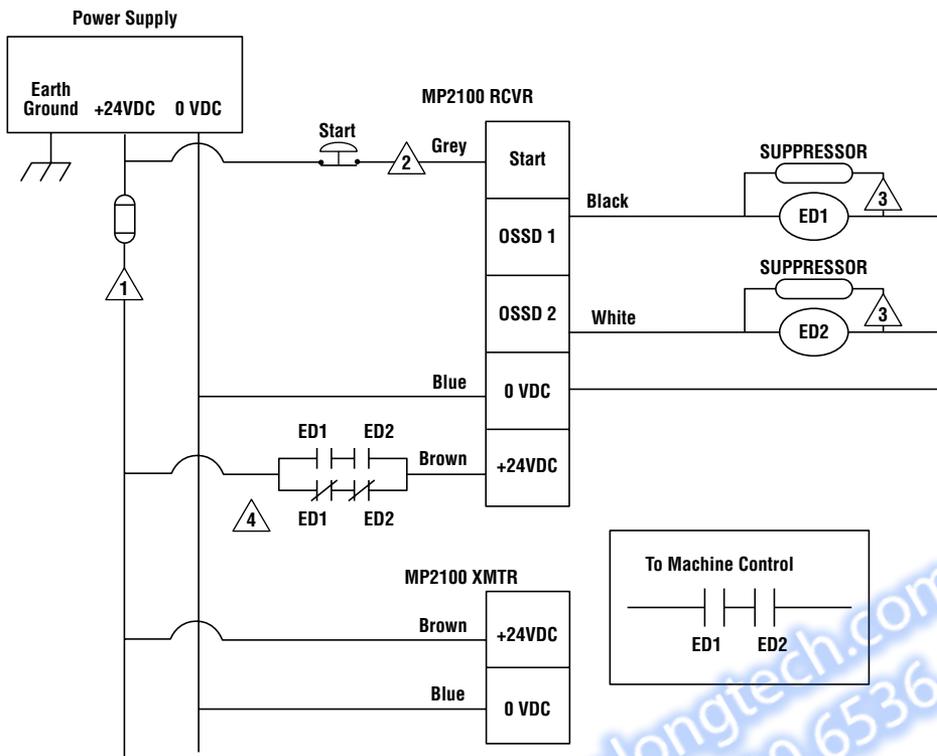
Mini Protect , Dimensions

	150 mm	300 mm	450 mm	600 mm	750 mm
A mm/in.	147/5.8	294/11.6	441/17.4	588/23.2	735/28.9
B mm/in.	245/9.7	392/15.5	540/21.2	687/27.0	833/32.8
C mm/in.	272/10.8	419/16.5	566/22.3	713/28.1	860/33.9
System Shipping Weight kg/lb.	2.7/6.0	2.9/6.5	3.2/7.0	3.4/7.5	3.6/8.0

	900 mm	1050 mm	1200 mm	1350 mm	1500 mm
A mm/in.	882/34.7	1029/40.5	1176/46.3	1323/52.1	1470/57.9
B mm/in.	981/38.6	1128/44.4	1274/50.2	1421/56.0	1569/61.8
C mm/in.	1007/39.7	1154/45.5	1301/51.3	1448/57.1	1595/62.8
System Shipping Weight kg/lb.	3.9/8.5	4.1/9.0	4.3/9.5	4.5/10.0	4.8/10.5

Wiring

Connecting to Machine Control System Via Two Force-Guided Relays



- 1 User-supplied fuse.
- 2 If remote start is not used, connect the start line (Grey wire) to +24 VDC.
- 3 The external devices must be suppressed with the components provided in the Documentation Kit.
- 4 Install these contacts to monitor the external devices. If one of the devices were to fail in a closed (welded) condition, power to the MP2100 will be interrupted and the second device will stop the machine.

Ordering

To order a MiniProtect MP2100 system, simply fill in the fields in the model number sequence given below.

MP21Y - 30 - -
① ②

Example: MP21Y-30-300-AS

This MP2100 standard system has a 30 mm (1.18 in.) minimum object resolution, a 294 mm (11.6 in.) coverage height, and an automatic start operating mode. The transmitter and receiver cables are sold separately (see below).

① Information required. Represents the coverage height of the detection zone.

Designator	Coverage Height
150	147 mm (5.8 in.)
300	294 mm (11.6 in.)
450	441 mm (17.4 in.)
600	588 mm (23.2 in.)
750	735 mm (28.9 in.)
900	882 mm (34.7 in.)
1050	1029 mm (40.5 in.)
1200	1176 mm (46.3 in.)
1350	1323 mm (52.1 in.)
1500	1470 mm (57.9 in.)

② Information required. Represents the operating mode.

Designator	Description
AS	Automatic Start
RS	Start/Restart Interlock
Note: This feature is only factory configured.	

Accessories (Order Separately)

Transmitter Cables	Part Number
3 m (9.8 ft.)	CBL-21TX-3M
10 m (32.8 ft.)	CBL-21TX-10M
30 m (98.5 ft.)	CBL-21TX-30M

Receiver Cables	Part Number
3 m (9.8 ft.)	CBL-21RX-3M
10 m (32.8 ft.)	CBL-21RX-10M
30 m (98.5 ft.)	CBL-21RX-30M

Resource Modules and Force-Guided Relays

The MP2100 is compatible with the following products: the RM-1, RM-3, and RM-X resource modules, and the FGR Series relays

 For information on safety light curtain accessories, see page D75

 For information on Resource Modules, see page D60

 For information on Force-Guided Relays, see page H1

Safety Standards and Precautions

DO NOT use this Protective Light Curtain where a risk assessment has determined that control reliability is required, such as for hazardous machinery. Use only for equipment where the worst-case injury from an accident can be remedied by simple first aid, as determined by a thorough risk assessment.

DO NOT use unless the device is installed, tested, and inspected according to Omron's Installation Manual

This protective device meets the Type 2 requirements of IEC 61496. It DOES NOT meet U.S. OSHA 1910.217, ANSI B11, or ANSI/RIA R15.06 requirements.

If you are unsure of which model of light curtain to choose, contact OMRON Automation and Safety. Failure to comply with this warning could result in serious injury or death.

The MiniProtect MP2100 should only be used on machinery that can consistently and immediately stop anywhere in its cycle or stroke. Never use a MiniProtect MP2100 on a full revolution clutched power press or machine. If the light curtain does not protect all access to the point of operation, the unprotected access must be guarded by other appropriate devices such as mechanical guards.

The purchaser, installer and employer have the responsibility to meet all local, state and federal government laws, rules, codes or regulations relating to the proper use, installation, operation and maintenance of this control and the guarded machine. See the Installation and Operation Manual for additional information.

All application examples described are for illustration purposes only. Actual installations will differ from those indicated.

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