

Safety Light Curtains

MS4800

MiniSafe® Light Curtains

- Resolutions: 14 mm (0.55 in.), 20 mm (0.79 in.), 30 mm (1.18 in.), and 40 mm (1.57 in.)
- Ranges: 7 m (23 ft.) for 14 mm resolution systems; and 20 m (65 ft.) for 20, 30 and 40 mm resolution systems
- Protected Heights:
280 to 1800 mm (11 to 70 in.) for 14 and 20 mm resolution systems; 280 to 2120 mm (11 to 83 in.) for 30 mm resolution systems; and 360 to 2040 mm (14 to 80.3 in.) for 40 mm resolution systems
- Compact size: 50 x 38 mm (2 x 1.5 in.)
- "Two-box" design — no separate control box; no cable between transmitter and receiver
- Individual Beam Indicators
- Quick and easy fixed blanking programming option "SB1"



Feature Set Comparison

The MS4800 light curtain family is an all-purpose light curtain available in three distinct versions. These versions are identified as the MS4800A, MS4800B and the MS4800S. The MS4800A and MS4800B feature set (configuration) can be changed through the use of an external device called the Programming Diagnostic Module (PDM) and on the MS4800S through selector switches.

Feature Set Comparison	MS4800A	MS4800B	MS4800S
Flex Bus, Multi-Segmented Head Configurations	■	■	■
Scan Code for Cross-Talk Mitigation	■*	■*	■
EDM External Device Monitoring (MPCE Monitoring)	■**	■**	■
PDM (Programming and Diagnostic Module)	■	■	
Adjustable Mounting Brackets and T-Slots	■	■	■
Non-Shielded Main Cables	■	■	■
2-Box Design	■	■	■
Two PNP Safety Outputs	■	■	■
Operating Modes	■*	■*	■
Machine Test Signal (MTS)	■*	■*	■
Auxiliary Output (PNP or NPN)	■*	■***	■***
Muting Through RM-6 Resource Module (only with MSF4800)	■*		■****
Floating Blanking	■*		■
Fixed Blanking	■*		■
Monitored Blanking	■*		
Reduced Resolution	■*		
Range Selection	■*	■*	■
Start Input Type	■*		
Response Time Adjustment	■*		

Note: The MS4800S can be configured with the quick fixed blanking programming option "SB1".

*Configured via use of the Programming and Diagnostic Module (PDM)

**Configured via PDM and wiring configuration

***PNP/Follow only

****Simple two-sensor muting

Specifications

Performance	
Protected Height:	14 & 20 mm — 280 to 1800 mm (11.0 to 70.9 in.) 30 mm — 360 to 2120 mm (14.2 to 83.5 in.) 40 mm — 360 to 2040 mm (14.0 to 80.3 in.)
Object Resolution:	14, 20, 30 and 40 mm
Range:	14 mm Resolution — 0.3 to 7 m (1 to 23 ft.) default; 0.3 to 3 m (1 to 10 ft.) 20, 30 40 mm Resolutions — 0.3 to 20 m (1 to 65 ft.) default; 0.3 to 8 m (1 to 26 ft.)
Effective Aperture Angle:	±2.5° maximum, transmitter and receiver at operating range greater than 3 m (10 ft.) per IEC 61496-2
Safety Output:	Two PNP, each output sourcing 625 mA @ 24 VDC, short circuit protected (see Note 1)
Response Time:	See response time tables
Auxiliary (Non-Safety) Output:	MS4800A — One PNP sourcing 100 mA (follow mode) default, or one sinking NPN and alarm modes configured via PDM MS4800B and MS4800S — One PNP sourcing 100 mA (follow mode)
EDM Monitor:	50 mA @ 24 VDC (See Note 2)
Start/Restart Input (10 mA Consumption):	MS4800A — NC to 0 VDC default; NO and 24 VDC modes configured via PDM MS4800B and MS4800S — NC to 0 VDC only
Light Source:	Infrared light emitting diode, 880 nm
Transmitter Indicator Light:	Active (yellow)
Receiver Indicator Light:	Machine Run/Stop (green/red), Interlock/Alarm (yellow), Blanking (amber)
Electrical	
Power Input Transmitter:	24 VDC ±20% 285 mA max.
Power Input Receiver:	24 VDC ± 20%, 1.8 A max. (receiver 450 mA + OSSD1 625 mA max. + OSSD2 625 mA max. + auxiliary 100 mA max.)
Muting Option (RM-6):	24 VDC ± 20%, 115 mA max.
Power Supply:	Must meet requirements of IEC 60204-1 and IEC 61496; Omron STI part number 42992 or equivalent (see Note 1)
Mechanical	
Construction:	Polyester powder painted aluminum
Cable Length:	Available in 10, 15 and 30 m (33, 49 and 99 ft.) lengths, unshielded
Wire Connections:	M12 connections; 8-pin receiver & 5-pin transmitter
Environmental	
Enclosure Rating:	IP65
Operating Temperature:	-10 to 55°C (14 to 131°F)
Storage Temperature:	-25 to 75°C (-13 to 167°F)
Relative Humidity:	95% maximum, non-condensing
Shock:	10 g for 0.016 seconds; 1,000 shocks for each of three axis
Conformity/Approvals	
Conforming to Standards:	ANSI/RIA R15.06-1999, ANSI B11.19-2003, OSHA 1910.217(c)
Other Approvals:	All systems have been EC type examined to the requirements of IEC 61496-1, -2 for a Type 4 ESPE. TUV registration no. BB 600166650001. SIL 3 per EN 61508.
Explosion-Proof Enclosure Certifications	Europe: ATEX Directive 94/9/EC, Certificate Number DEMKO 04 ATEX 0322237U
	North America: Class I, II & III, Div. 1 & 2
	Canada: UL (FTRV7); Canadian Electrical Code: Class I, Groups C and D; Class II, Groups E, F & G (Ref. C22.2 No. 30-1991 and C22.2 No. 25-1966). UL listed.
	U.S.: UL (FTRV), NFPA 70/NEC: Class I, Groups C & D; Class II, Groups E, F & G; Class II Groups F & G Division II only. UL listed

Specifications are subject to change without notice.

Note 1: Total current required by two solid-state safety outputs and the auxiliary output should not exceed 1.35 A. Total system current requirements is the sum of transmitter (285 mA), receiver (450 mA), OSSD1 (625 mA), OSSD2 (625 mA) and Aux. Output (100 mA).

Note 2: 24 VDC is nominal. Actual voltage is dependant upon supply, $V = V_{\text{supply}} - 2 \text{ V}$.

Response Time Tables

One Segment System

Response Time (ms)		Beam Count	
Normal	Slow*	Min.	Max.
14	23	0	16
23	38	17	71
32	53	72	126
41	68	127	180
50	83	181	235
59	99	236	256

Two Segment System

Response Time (ms)		Beam Count	
Normal	Slow*	Min.	Max.
23	38	0	65
32	53	66	120
41	68	121	174
50	83	175	229
59	99	230	256

Three Segment System

Response Time (ms)		Beam Count	
Normal	Slow*	Min.	Max.
23	38	0	59
32	53	60	114
41	68	115	168
50	83	169	223
59	99	224	256

Four Segment System

Response Time (ms)		Beam Count	
Normal	Slow*	Min.	Max.
23	38	0	53
32	53	54	108
41	68	109	162
50	83	163	217
59	99	218	256

*Response time adjustment is only available on the MS4800A.