



GL-R31F

Main Unit, Finger-protection Type, 31 Optical Axes



SPECIFICATIONS

Model		GL-R31F	
Beam axis spacing/Lens diameter		10 mm / ø4	
Detection capability		ø14 mm	
Operating distance		0.2 to 10 m ³	
Effective aperture angle		Max. ±2.5° (When operating distance is 3 m or more)	
Light source		Infrared LED (870 nm)	
Response time (OSSD)(ms)	Wire synchronisation, One-line or Optical synchronisation system (Channel 0)	ON→OFF	7.8
		OFF→ON ¹	50.5
		All blocked→ON ²	67.9
	Optical synchronisation system (Channel A or B)	ON→OFF	10.7
		OFF→ON ¹	54.8
		All blocked→ON ²	79.5
OSSD operation		Turns on when no interruptions are present in the detection zone	
Synchronisation between the transmitter and receiver		Optical synchronisation or Wire synchronisation (Determined by wiring)	
Light interference prevention function		Prevents mutual interference in up to two GL-R systems. Optical synchronization: prevented by Channel A and B with setting switch Wire synchronization: prevented automatically	
Control output (OSSD output)	Output	2 transistor outputs. (PNP or NPN is determined by the cable type)	
	Max. load current	500 mA ⁴	
	Residual voltage (during ON)	Max. 2.5 V (with a cable length of 5 m)	
	OFF state voltage	Max. 2.0 V (with a cable length of 5 m)	
	Leakage current	Max. 200 µA	
	Max. capacitive load	2.2 µF	
	Load wiring resistance	Max. 2.5 Ω	
Supplemental output (Non-safety-related output)	AUX	transistor outputs. (PNP or NPN is determined by the cable type)	
	Error output	Load current: Max. 50 mA, Residual voltage: Max. 2.5 V (with a cable length of 5 m)	
	Muting lamp output	Incandescent lamp (24 VDC, 1 to 5.5 W) LED lamp (load current: 10 to 230 mA) can be connected	
External input	When using a PNP output cable	EDM input Wait input Reset input Muting input 1, 2 Override input	ON voltage: 10 to 30 V OFF voltage: Open or 0 to 3 V Short circuit current: Approx. 2.5 mA (Approx. 10 mA with EDM input only)
	When using an NPN output cable		ON voltage: 0 to 3 V OFF voltage: Open or 10 V or more Up to the power voltage Short circuit current: Approx. 2.5 mA (Approx. 10 mA with EDM input only)
Power supply	Voltage	24 VDC ±20%, ripple (P-P) 10% or less, Class 2	
	Current consumption (Max.)(mA)	Transmitter	54
		Receiver	71
Protection circuit		Reverse current protection, short-circuit protection for each output, surge protection for each output	
Environmental resistance	Enclosure rating	IP65/IP67 (IEC60529)	
	Overtoltage category	II	
	Ambient temperature	-10 to +55°C (No freezing)	
	Storage ambient temperature	-25 to +60°C (No freezing)	
	Relative humidity	15 to 85% RH (No condensation)	
	Storage relative humidity	15 to 95% RH	
	Ambient light	Incandescent lamp: 3,000 lx or less. Sunlight: 20,000 lx or less	
	Vibration	10 to 55 Hz, 0.7 mm compound amplitude, 20 sweeps each in the X, Y and Z directions	
	Shock	100m/S ² (approx. 10 G), 16 ms pulse in X, Y and Z directions, 1,000 times each axis	
Material	Main unit case	Aluminium	
	Upper case/lower case	Nylon (GF 30%)	
	Front cover	Polycarbonate, SUS304	
Weight(g)	Transmitter	430	
	Receiver	440	
Approved standards	EMC	EMS	IEC61496-1, EN61496-1, UL61496-1
		EMI	EN55011 ClassA, FCC Part15B ClassA, ICES-003 ClassA
	Safety	IEC61496-1, EN61496-1, UL61496-1 (Type 4 ESPE)	

		IEC61496-2, EN61496-2, UL61496-2 (Type 4 AOPD) IEC61508, EN61508 (SIL3), IEC62061, EN62061 (SIL CL3) EN ISO13849-1:2008 (Category 4, PLc) UL508 UL1998
--	--	--

^{*1} If the interruption is present in the detection zone for less than 80 ms, the response time (OFF to ON) will be 80 ms or more to ensure that the OSSD maintains the OFF state for more than 80 ms.

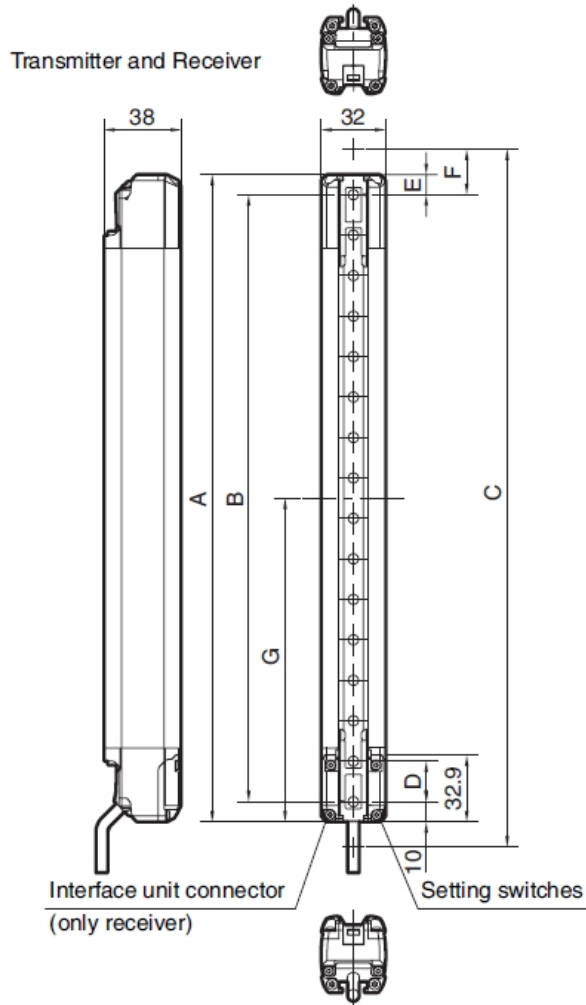
^{*2} "All blocked" means the situation where the GL-R operates in optical synchronisation system and the transmitter and receiver is not synchronised (top and bottom beam axes are both blocked). In this situation, the response time is longer because the GL-R synchronises the transmitter and receiver first and then determines the clear or blocked.

^{*3} When the option front protection cover is installed on the one of transmitter or receiver, the Operating distance is shorten by 0.5 m. When the front covers are installed on both of the transmitter and receiver, the Operating distance is shorten by 1.0 m.

^{*4} When the GL-R is used under surrounding air temperatures between 50 to 55°C, the Maximum load current should not exceed 350 mA.

Dimensions

■ GL-RF



Units: mm

Model	Beam axes	A: Length	B: Detection height	C: Protection height	D: Beam axis pitch	E	F	G
GL-R23F	23	240	220	244	10	10	12	120
GL-R31F	31	320	300	324				160
GL-R39F	39	400	380	404				200
GL-R47F	47	480	460	484				240
GL-R55F	55	560	540	564				280
GL-R63F	63	640	620	644				320
GL-R71F	71	720	700	724				360
GL-R79F	79	800	780	804				400
GL-R87F	87	880	860	884				440
GL-R95F	95	960	940	964				480
GL-R103F	103	1040	1020	1044				520
GL-R111F	111	1120	1100	1124				560
GL-R119F	119	1200	1180	1204				600
GL-R127F	127	1280	1260	1284				640