



SL-V16L

Main Unit, General-purpose Type, 16 Optical Axes



SPECIFICATIONS

Model		SL-V16L		
Detection capability		ø45 mm		
Beam axis spacing/Lens diameter		40 mm/ø5 mm		
Effective aperture angle		Max. ±2.5 ° (When operating distance is 3 m or more)		
Working distance		0.1 to 9 m		
Response time (ms)	ON→OFF	8.1 ^{*1}		
	OFF→ON	48.1 ^{*1}		
Light source		Infrared LED (850 nm)		
Operation mode		Turns on when no interruptions are present in the detection zone (excluding when the muting function is used)		
OSSD output	Output	2 outputs each for PNP and NPN. Can be changed by using the connector cable.		
	Max. load current	500 mA ^{*2}		
	Residual voltage (during ON)	Max. 2.5 V (with a cable length of 7 m)		
	Leakage current	Max. 100 µA ^{*3}		
	Max. capacitive load	2.2 µF (with a load resistance of 100 Ω)		
	Load wiring resistance	Max. 2.5 Ω ^{*4}		
Non safety-related output	AUX	Output with automatic PNP/NPN switching function, 50 mA max.		
	Interlock-reset-ready output			
	Alarm output			
	Clear/blocked output			
	State information output 1, 2			
	Muting lamp output	Incandescent lamp (24 VDC, 1 to 7 W) or LED lamp (load current: 10 to 300 mA) ^{*5} can be connected		
Input	EDM input	Short-circuit current 10 mA		
	Wait input	Short-circuit current 2.5 mA		
	Reset input			
	Muting input 1, 2			
	Override input			
	Protection circuit	Reverse current protection, short-circuit protection for each output, surge protection for each output		
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, UL61496-2, EN61496-2 (Type 4 AOPD) IEC61508 (SIL3), EN61508 (SIL3), IEC62061 (SIL3), EN ISO13849-1: 2015 (Category 4, PLe) UL508 UL1998		
Rating	Power voltage		24 VDC +10 %, -20 %, Ripple (P-P) 10 % or less	
	Current consumption (mA)	When the Centre indicator is ON	Transmitter	79 ^{*6}
			Receiver	77 ^{*6}
		When the Centre indicator is OFF	Transmitter	72 ^{*6}
			Receiver	69 ^{*6}
	Enclosure rating		IP65 (IEC60529)	
Overvoltage category		II		
Ambient light		Incandescent lamp: 5,000 lux max., Sunlight: 20,000 lux max.		
Operating ambient temperature		-10 to +55 °C (No freezing)		
Storage temperature		-25 to +60 °C (No freezing)		
Operating relative humidity		15 to 85 % RH (No condensation)		
Storage relative humidity		15 to 95 % RH		
Vibration resistance		10 to 55 Hz, Double amplitude 0.7 mm, 20 sweeps in each of the X, Y, and Z directions		
Shock resistance		100 m/s ² (Approx. 10 G), 16 ms pulse, 1,000 times in each of the X, Y, and Z directions		
Material	Main unit case		Aluminium	
	Upper case/lower case		Zinc die-cast	
	Front cover		Polycarbonate, SUS304	
Weight	Transmitter		450 g	
	Receiver		465 g	

^{*1} When connecting the SL-V units in series, the response time (ON to OFF) is the sum of the response times of all the individual SL-V units, but the response time (OFF to ON) is the same as that of a single SL-V unit.
e.g. When connecting the SL-V32H (32 beam axes), SL-V24H (24 beam axes), and SL-V12L (12 beam axes) in series, the response time of each unit is 10.3 ms, 9.2 ms, and 7.6 ms respectively, and the response time (ON to OFF) is $10.3 \text{ ms} + 9.2 \text{ ms} + 7.6 \text{ ms} = 27.1 \text{ ms}$.

^{*2} When used under ambient temperature between 45 to 55 °C, the maximum should not exceed 300 mA.

^{*3} Applies to situations when power is either off or disconnected.

^{*4} The wiring resistance between the OSSD output and the connected equipment (excluding the resistance of the cable) must be 2.5 Ω or less to ensure operations. If using the NPN output with a cable length of 15 m or longer, and the load current consumption is 200 mA or more, the wire resistance must be 1.0 Ω or less.

^{*5} When used under ambient temperature between 45 to 55 °C, use incandescent lamps (24 VDC, 1 to 3 W) or LED lamps (load current: 10 to 100 mA).

^{*6} The current consumption of the transmitter increases by 10 mA and decreases on the receiver by 10 mA when the AUX output (red wire of the transmitter) and the EDM input (red wire of the receiver) are short circuited if the following additional condition is met. (The total consumption of both transmitter and receiver is fixed.)
In the case where the PNP output type cable is used, the condition is that OSSD stays in the OFF state.
In the case where the NPN output type cable is used, the condition is that OSSD stays in the ON state.

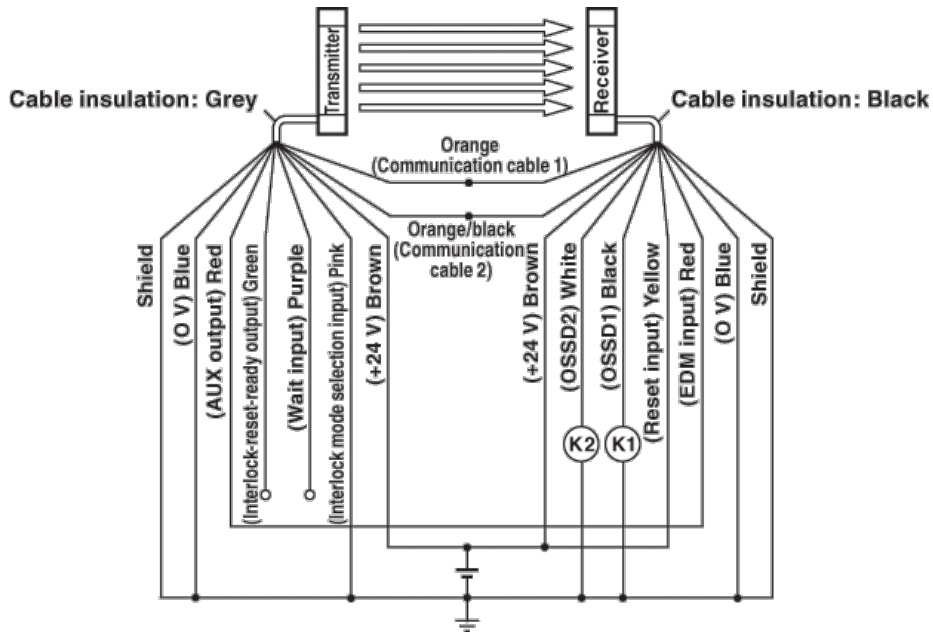
Dimensions

* Download CAD file or product manual for larger image/text and more detail.

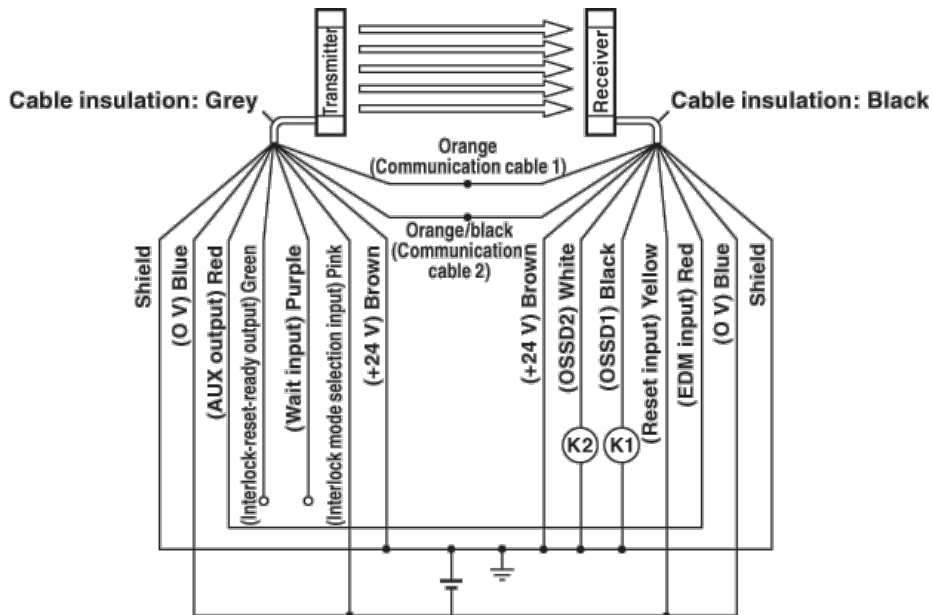
I/O Circuit Connection diagram

* Download CAD file or product manual for larger image/text and more detail.

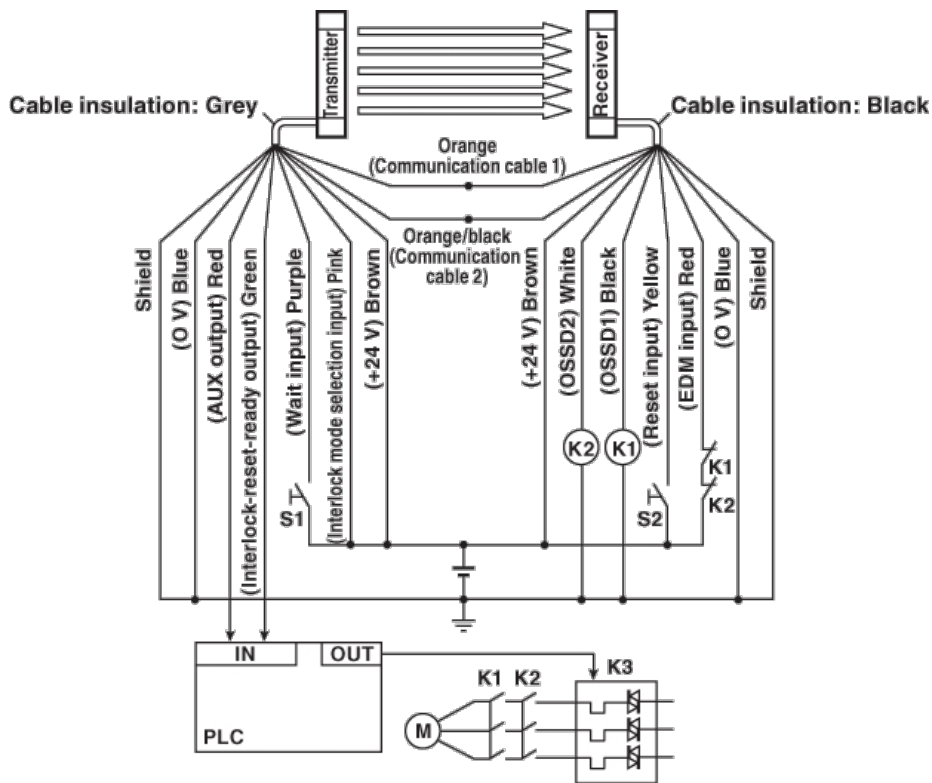
Wiring example with the simple function cable to use only OSSD outputs [Auto-reset mode]
PNP output



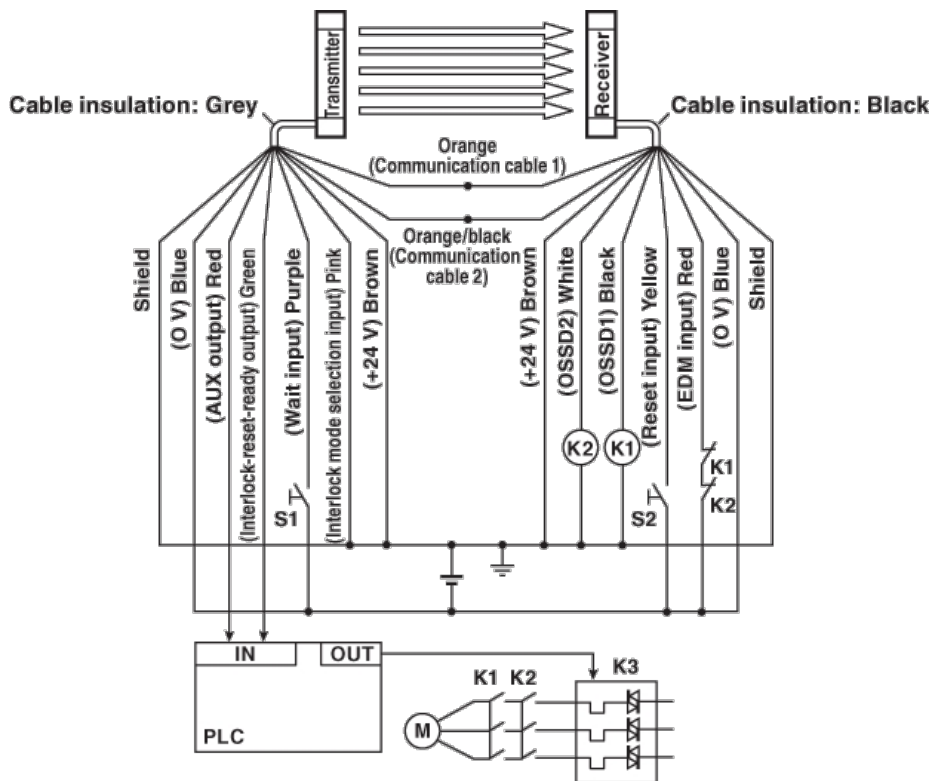
Wiring example with the simple function cable to use only OSSD outputs [Auto-reset mode]
NPN output



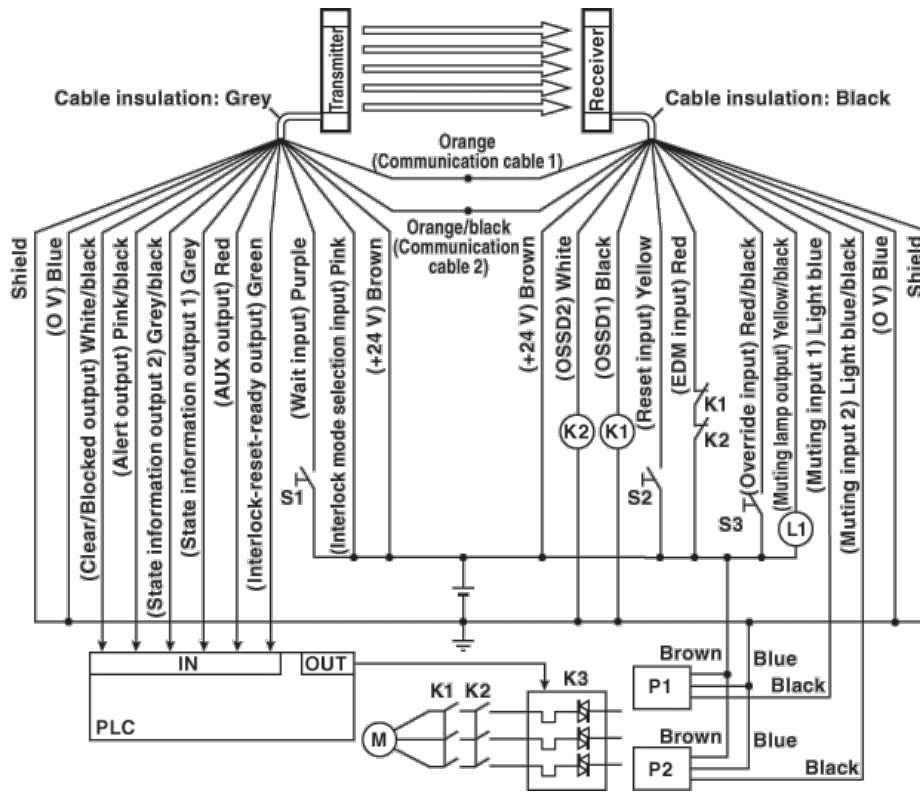
Wiring example when using all of the functions that can be performed with the simple function cable
[Manual reset mode]
PNP output



Wiring example when using all of the functions that can be performed with the simple function cable
 [Manual reset mode]
 NPN output



Example of wiring for the multi-function type cable
 PNP output



Example of wiring for the multi-function type cable NPN output

