SL-V16H

Main Unit, General-purpose Type, 16 Optical Axes

SPECIFICATIONS

Model				SL-V16H
Detection capability				ø25 mm
Beam axis spacing/Lens diameter				20 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. l oad current			500 mA*2
	Residual vol tage (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-rel atedout put	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 Class A, FCC Part15B Class A
	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 (m A)	When the Centre indicator is O N	Transmitt er	69*6
			Receiver	74*6
		When the Centre indicator is O FF	Transmitt er	64*6
			Receiver	67*6
Environmental resistan ce	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			250 g
	Receiver			265 g

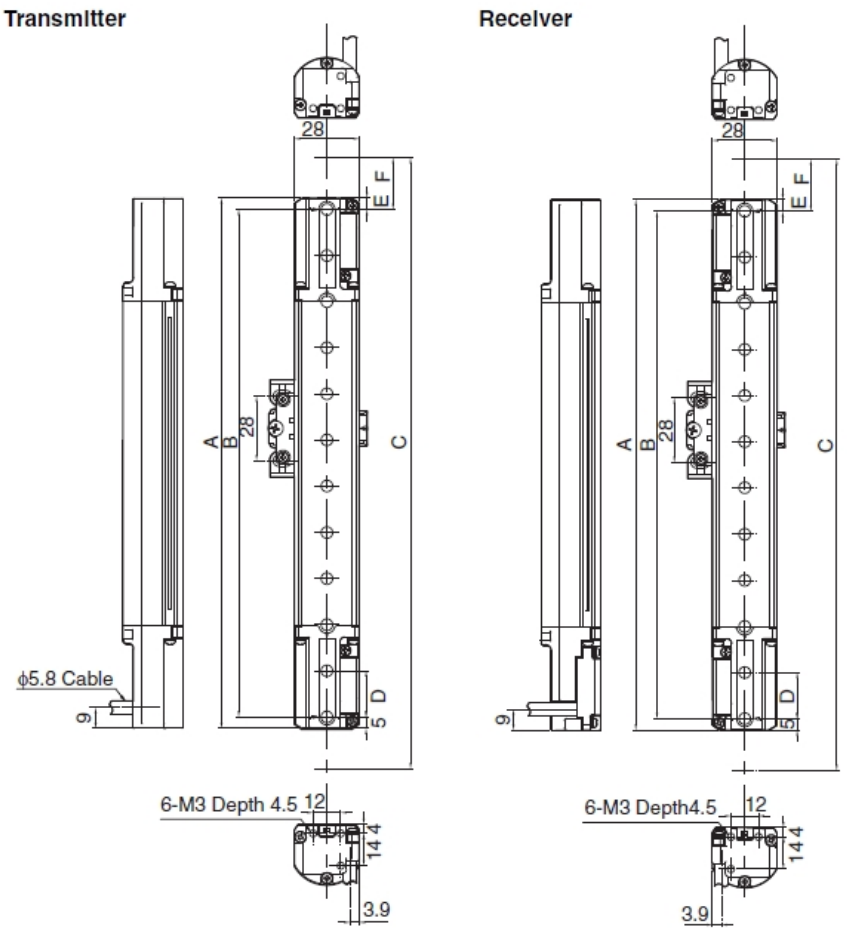
*1 When connecting the SL-V units in series, the response time (ON to OFF) is the sum of theresponse times of al l the individual SL-V units, but the response time (OFF to ON) is the sameas that of a singl e SL-V unit.
e.g. When connecting the SL-V32H (32 beam axes), SL-V24H (24 beam axes), andSL-V12L (12 beam axes) in series, the response time of each unit is 10.3 ms, 9.2 ms, and 7.6ms respectively, and the response time (ON to OFF) is 10.3 ms + 9.2 ms + 7.6 ms = 27.1 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 fol lowing additional condition is met. (The total consumption of both transmitter and receiver is fixed.)
In the case where the PNP output type cabl e 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.

■ For SL-VF, SL-VH, and SL-VL

Units: mm



■ SL-VH

Units: mm

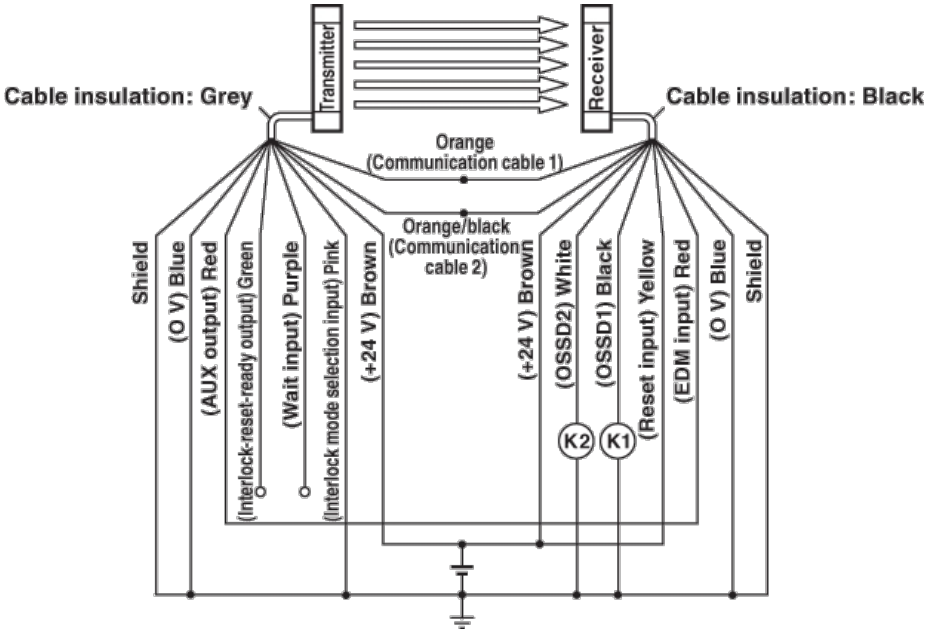
Model	Beam axes	A: Length	B: Detection height*1	C: Protection height	D: Beam axis spacing	E	F
SL-V08H	8	150	140	185	20	5	22.5
SL-V12H	12	230	220	265			
SL-V16H	16	310	300	345			
SL-V20H	20	390	380	425			
SL-V24H	24	470	460	505			
SL-V28H	28	550	540	585			
SL-V32H	32	630	620	665			
SL-V36H	36	710	700	745			
SL-V40H	40	790	780	825			
SL-V44H	44	870	860	905			
SL-V48H	48	950	940	985			
SL-V52H	52	1030	1020	1065			
SL-V56H	56	1110	1100	1145			
SL-V60H	60	1190	1180	1225			

SL-V64H	64	1270	1260	1305			
SL-V72H	72	1430	1420	1465			
SL-V80H	80	1590	1580	1625			
SL-V88H	88	1750	1740	1785			
SL-V96H	96	1910	1900	1945			
SL-V104H	104	2070	2060	2105			
SL-V112H	112	2230	2220	2265			
SL-V120H	120	2390	2380	2425			

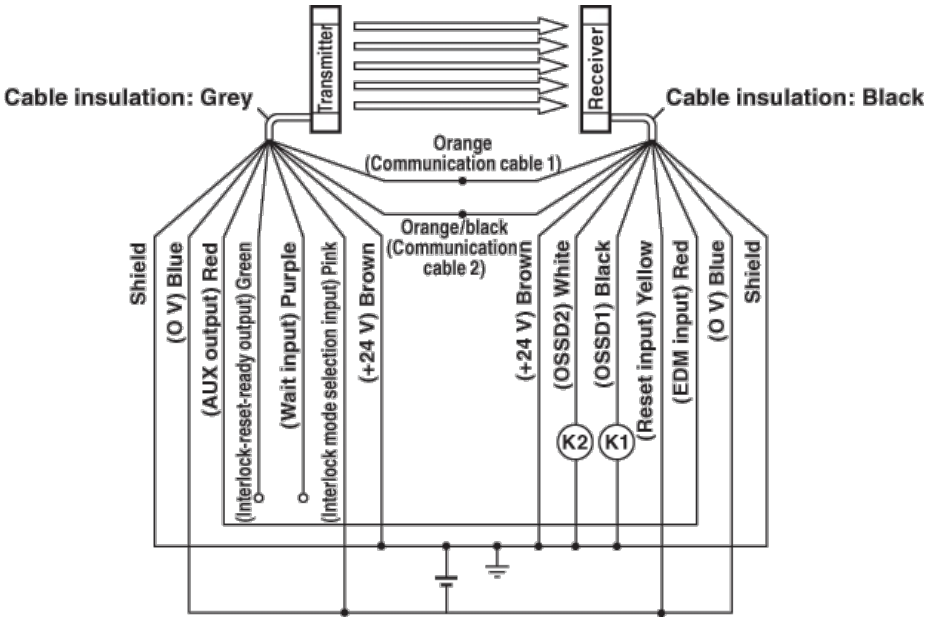
I/O Circuit Connection diagram

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

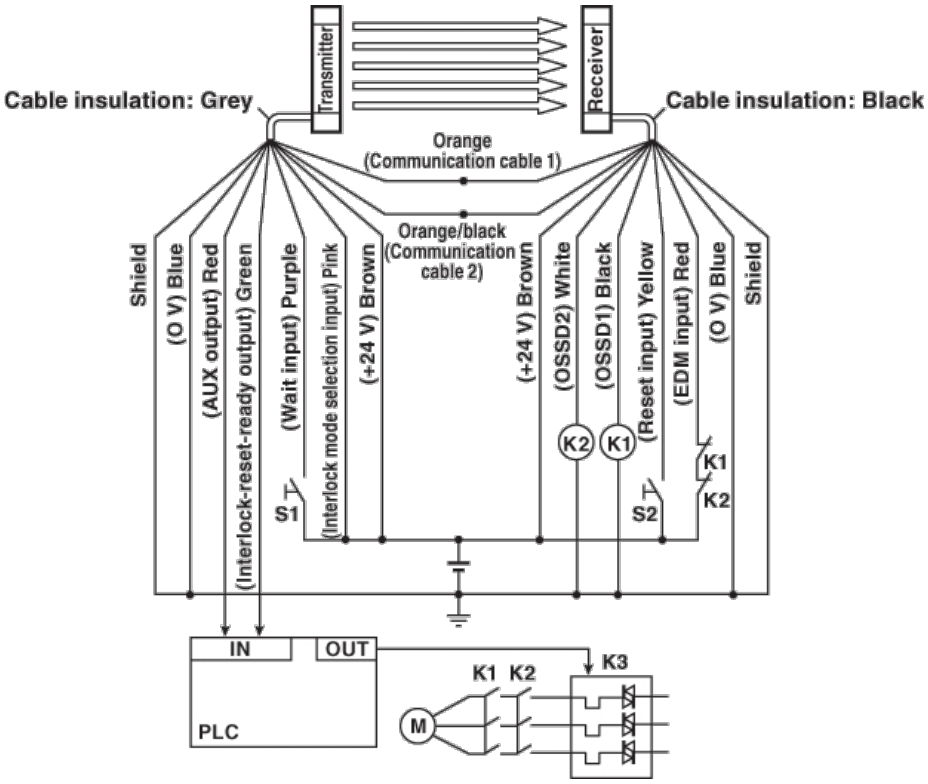
Wiring example with the simple function cable to use only OSSD outputs [Auto-reset mode]
PNP output



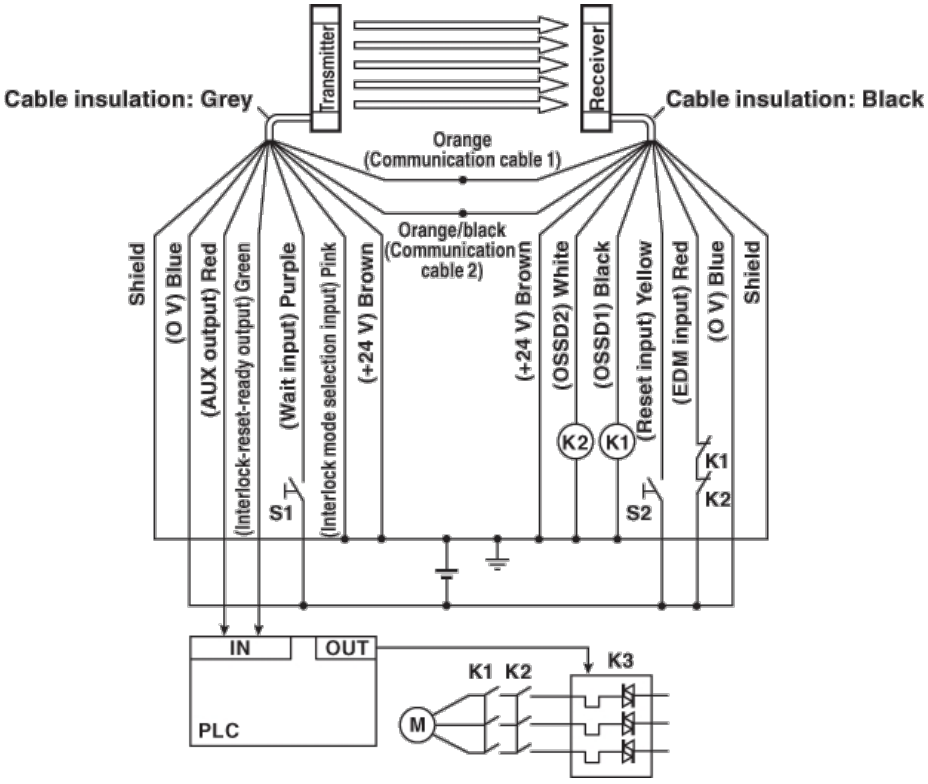
Wiring example with the simple function cable to use only OSSD outputs [Auto-reset mode]
NPN output



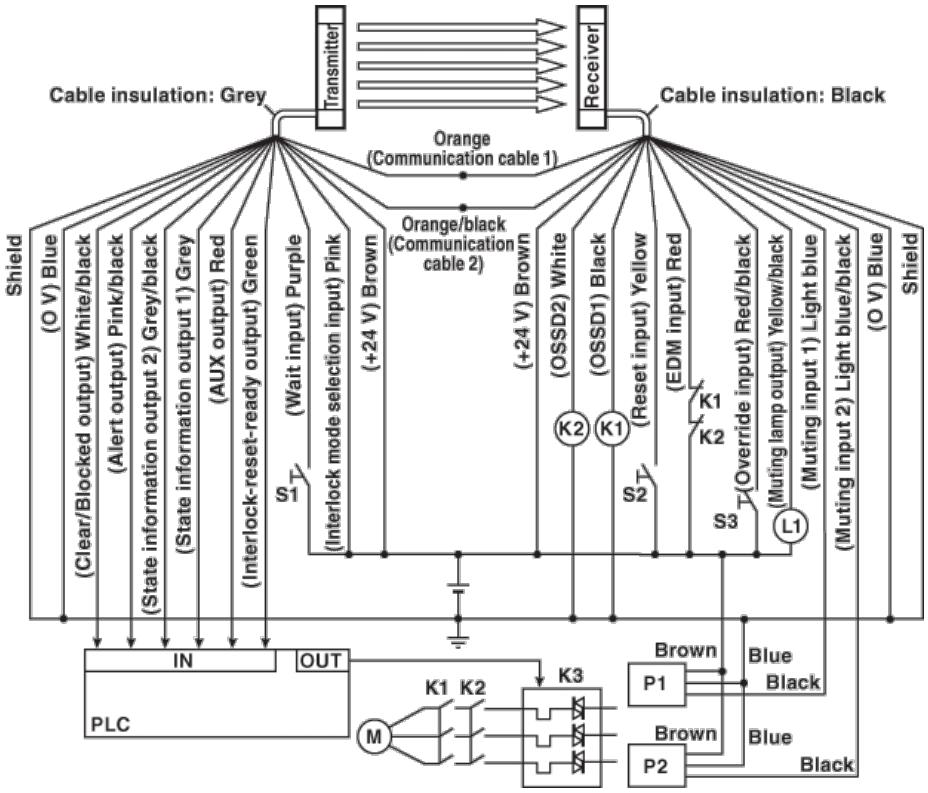
Wiring example when using all of the functions that can be performed with the simple function cable
[Manual reset mode]
PNP output



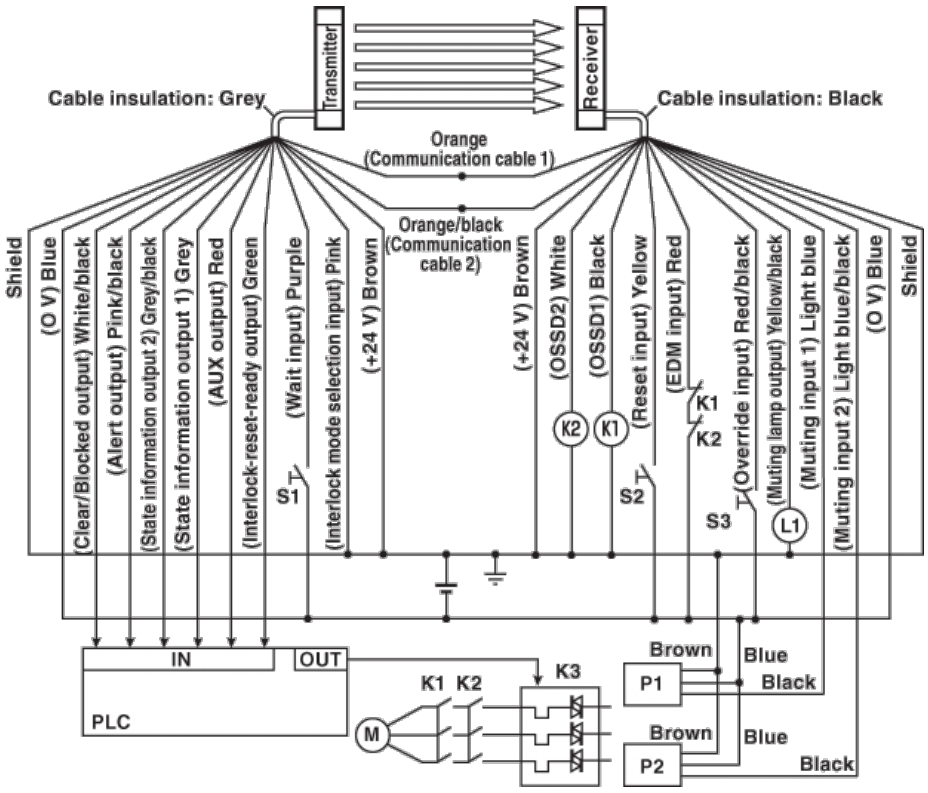
Wiring example when using all of the functions that can be performed with the simple function cable
[Manual reset mode]
NPN output



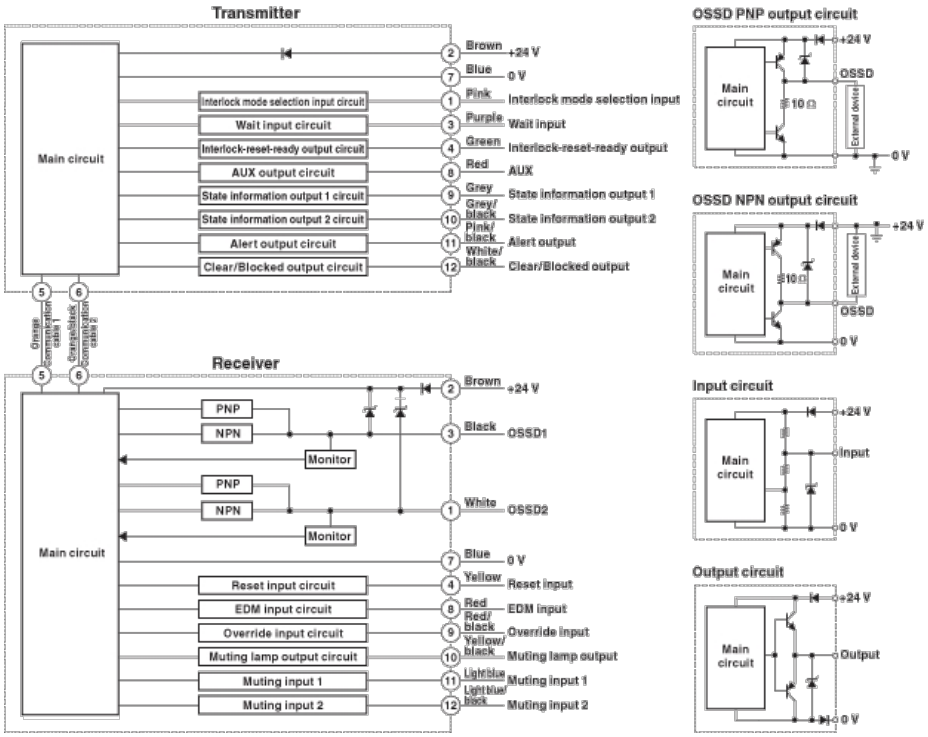
Example of wiring for the multi-function type cable
PNP output



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



Overall circuit diagram


Transmitter
Main circuit
Interlock mode selection input circuit
Wait input circuit
Interlock-reset-ready output circuit
AUX output circuit
State information output 1 circuit
State information output 2 circuit
Alert output circuit
Clear/Blocked output circuit
Brown +24 V
Blue 0 V
Pink Interlock mode selection input
Purple Wait input
Green Interlock-reset-ready output
Red AUX
Grey State information output 1
Grey/black State information output 2
Pink/black Alert output
White/black Clear/Blocked output
Orange Communication cable 1
Orange/black Communication cable 2
Receiver
PNP
NPN
Monitor
Reset input circuit
EDM input circuit
Override input circuit
Muting lamp output circuit
Muting input 1
Muting input 2
Brown +24 V
Black OSSD1
White OSSD2
Blue 0 V
Yellow Reset input
Red EDM input
Red/black Override input
Yellow/black Muting lamp output
Light blue Muting input 1
Light blue/black Muting input 2
OSSD PNP output circuit
Main circuit
+24 V
OSSD
10 Ω
External device
0 V
OSSD NPN output circuit
Input circuit
Input
Output circuit
Output