SG-BWS SERIES

The SG-BWS series presents two models:

- SG-BWS-T4: control unit with plastic housing for DIN/OMEGA rail mounting equipped with 16 clamps that can connect from 1 to 4 photocell couples of the S5-ST, SL5-ST, S300 series with OSSD safety outputs;
- SG-BWS-T4-MT: control unit with plastic housing for DIN/OMEGA rail mounting equipped with 48 clamps that can connect from 1 to 4 photocell couples of the S5-ST, SL5-ST, S300 series and contemporaneously up to 2 safety light curtains equipped with safety outputs activated with two 230V relay.

The SG-BWS-T4 model is **WITHOUT MUTING FUNCTION** but presents EDM
and selectable MANUAL/AUTOMATIC
RESTART. The SG-BWS-T4-MT model
is provided with **DOUBLE MUTING FUNCTION**. The control unit fits some
safety outputs controlled depending
on the status of the safety photocells
connected to the device. A danger
condition detected by a photocell or light
curtain opens the outputs.





HIGHLIGHTS

- Two models:
- SG-BWS-T4 WITHOUT MUTING FUNCTION
- SG-BWS-T4-MT WITH DOUBLE MUTING FUNCTION
- Factory automation standard housing with compact dimensions
- Possibility to connect 4 safety singlebeam and 2 safety light curtains
 PLUS functions: Single/Double muting,
- PLOS functions: Single/Double muting, Edged/triggered Override, Double Muting Lamp, External Muting Enable
- Configurable device through dip-switches
- Satisfies the requirements of key safety Standards, such as Category 4 of EN 954-1, SIL3 of IEC 61508, and performance levels PL e of EN ISO 13849-1.

APPLICATIONS

Extreme reliability and simplicity make the SG-BWS control units the ideal solution for the following applications:

- · Automatic warehouses
- · Machines for food packaging
- Robots
- Automatic assembling lines
- Machines for PCB production







SETTINGS



- User interface is present on the top of the SG-BWS-T4 for signalling and configuration.
- Two units made of 8 dip-switches are present on the top of the SG-BWS-T4-MT model. These switches activate/deactivate and configure additional functions integrated in the device.
- Signalling interface and dip-switches are protected from nonauthorized access by transparent lids that can be opened using a specific tool.

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DIP	PURPOSE	OFF (Default)	ON
1	ENABLE EDM	ENABLED	DISABLED
2	RESET MODE	AUTOMATIC	MANUAL
3	MUTING TIME-OUT	10 MINUTES	INFINITY
4	MUTING DIRECTION	Т	L
2	OVERRIDE	EDGED	TRIGGERED
6	MUTING SELECTION	See specific table	
7	MUTING SELECTION		
8	MUTING SELECTION		

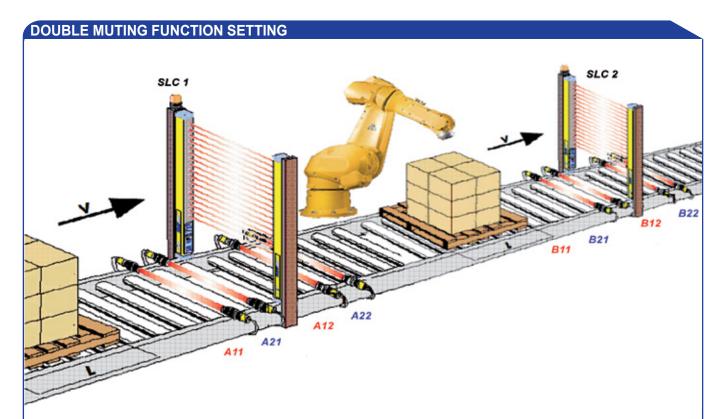
The EDM and MAN/AUTO Restart functions integrated in SG-BWS-T4 model can be selected through specific control unit lines (refer "CONNECTION" section of the present document).

INDICATORS

An user interface is present for viewing warnings and setup is present on the top of both SG-BWS-T4 and SG-BWS-T4-MT control units Besides the 7-segment display (for diagnostics purposes), the warning components include 3 LEDs:



LED	INDICATION
POWER	Device is powered correctly
NORMAL	No danger: safety outputs closed
SAFE	Danger or fault: safety outputs open
8.	The 7-segment display shows detailed information on control unit current status



Thanks to its two separate muting channels, SG-BWS-T4-MT can accept the muting request output by sensors without interrupting the safety function on light curtain or safety sensors of both channels. The dip-switches 6-7-8 allow users to couple the single devices to the 2 muting channels available on the SG-BWS-T4-MT control unit. Following table reports all the available combinations.

DIP-SWITCH SETUP	PHOTOCELLS	LIGHT CURTAIN 1	LIGHT CURTAIN 2
000	A	Α	Α
001	A	Α	В
010	A	В	В
011	-	А	В
100	A	В	-
101	-	Α	Α
110	A	-	-
111	-	-	-
0=OFF, 1=0N, A(B)=Device associated to channel A(B) Default setting: 000			

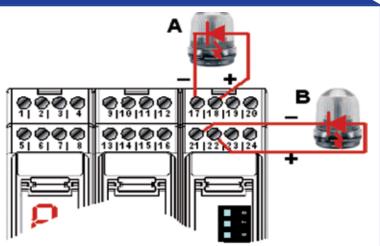
MUTING WARNING DEVICES

To use the Muting function it is also required to connect the external Muting warning (lamp) since control unit would lock out if it is missing. One lamp shall be used per channel. If device is preset for use of just one channel, both warning devices are associated to it: in this way, failure of one of the lamps would not lock out system operation.

SG-BWS-T4-MT allows installation of both incandescent

SG-BWS-T4-MT allows installation of both incandescent lamps and LEDs. For the latter case, polarity shall be carefully complied with, as indicated aside.

Note: When only 1 muting lamp is used, please connect on the clamps of the other one a 150 ohm > 5W resistor!

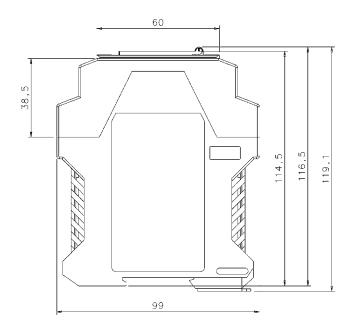


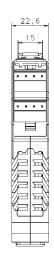
Note: the Muting lamp is not supplied with the device.

Please refer to "Accessory selection and order information table."

DIMENSIONS

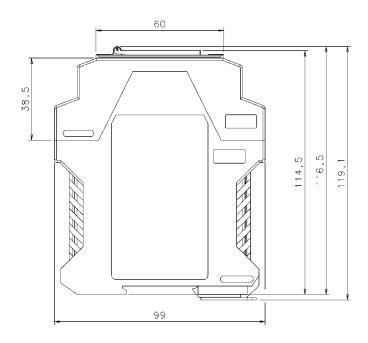
SG-BWS-T4

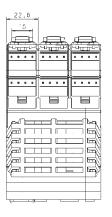






SG-BWS-T4-MT



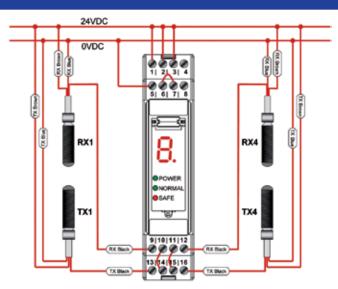




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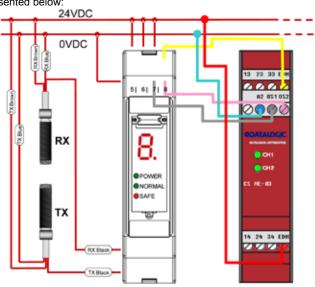
SG-BWS-T4 CONNECTIONS



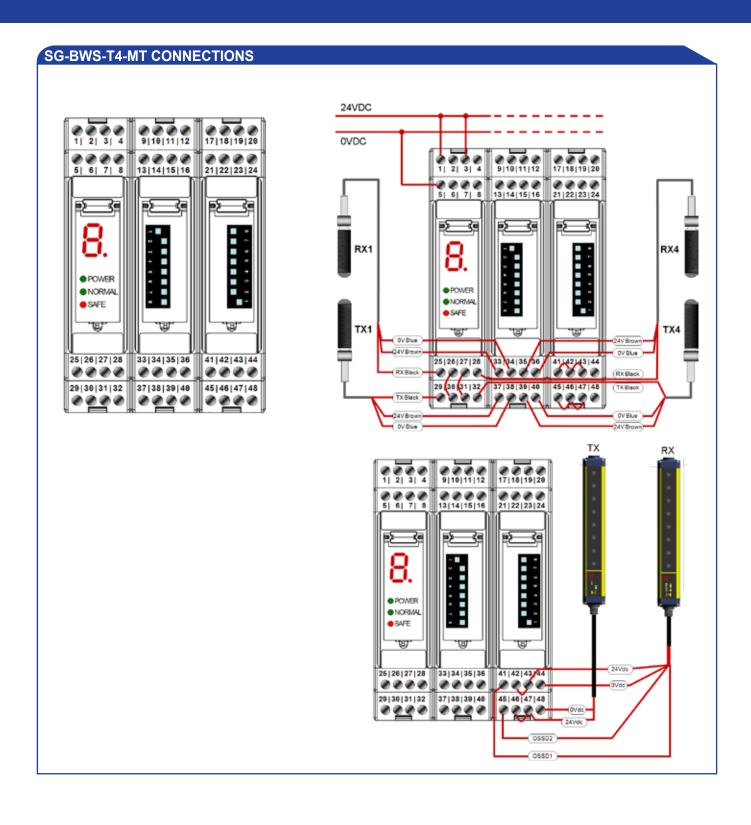


NOTE : As SG-BWS-T4 has OSSD Safety outputs in order to have relay outputs, the device must have EDM function connected to the CS-ME EDM relay box as represented below:

24VDC



SIGNAL	CONTACT	CONNECTION	
VCC	1	External 24Vdc	
START/TEST/RESET	2	- Contact NC towards 24Vdc	
EDM ENABLE	3	- 24Vdc > EDM DEACTIVATED - Not connected > EDM activated	
EDM	4	- NC contact of external relays towards 24Vdc (with EDM activated) - Not connected > with EDM deactivated	
0V	5	External 0Vdc	
MAN/AUTO	6	- OSSD1 (7) > AUTOMATIC RESTART - OSSD2 (8) > MANUAL RESTART	
OSSD1	7	Reel of external relay 1 (positive)	
OSSD2	8	Reel of external relay 2 (positive)	
RX1	9	PNP output of receiver photocell 1 (black)	
RX2	10	PNP output of receiver photocell 2 (black)	
RX3	11	PNP output of receiver photocell 3 (black)	
RX4	12	PNP output of receiver photocell 4 (black)	
TX1	13	TEST of emitter photocell 1 (black)	
TX2	14	TEST of emitter photocell 2 (black)	
TX3	15	TEST of emitter photocell 3 (black)	
TX4	16	TEST of emitter photocell 4 (black)	





VDC	SIGNAL	CLAMP	CONNECTION	FUNCTION
TEST/RESET 3	VDC	1	External 24Vdc	Power supply
EDM 4	START	2	NO contact towards 24Vdc	Reset function
EDM	TEST/RESET	3	NC contact towards 24Vdc	Test/Reset function
MUTEN A 6 NO contact towards 24Vdc Muting activation MUTEN B 7 NO contact towards 24Vdc Muting activation DEFLAMP 8 Positive terminal signaling device Lamp fault signaling MUTA1 9 PNP output of the A1 Muting sensor Muting input OVRA1 10 Contact of Override A1 No towards 24Vdc Override input MUTB1 11 PNP output of the B1 Muting sensor Muting input OVRA1 12 Contact of Override B1 NO towards 24Vdc Override input MUTA2 13 PNP output of 12 Muting sensor Muting input OVRA2 14 Contact of Override A2 NO towards 24Vdc Override input MUTB2 15 PNP output of 18 Muting sensor Muting input CVRB2 16 Contact of Override B2 NO towards 24Vdc Override input LAMPA- 17 N Regative terminal of the A Muting lamp Muting input uput LAMPA- 18 Positive terminal of the A Muting lamp Muting lamp output SAFNC21 20 NO relay 230V 2 output Safety contact	EDM	4	(with EDM activated)	Input EDM
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LAMPA+ 18 Positive terminal of the A Muting lamp Muting lamp output SAFNC11 19 NO relay 230V 1 output Safety contact LAMPB- 21 Negative terminal of the B Muting lamp Muting lamp output LAMPB- 22 Positive terminal of the B Muting lamp Muting lamp output SAFNC12 23 NO relay 230V 2 output Safety contact SAFNC22 24 Positive terminal of the B Muting lamp Muting lamp output SAFNC12 23 NO relay 230V 2 output Safety contact RX1 25 PNP output of the photocell receiver 1 (black) Photocell input RX2 26 PNP output of the photocell receiver 2 (black) Photocell input RX3 27 PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 3 (black) Photocell input RX4 29 TEST of the photocell emitter 1 (black) Photocell output RX3 31 TEST of the photocell emitter 1 (black) Photocell output RX3 31 TEST of the photocell emitter 1 (black) Photocell output RX4 32 TEST of the photocell emitter 1 (black) Photocell output RX4 32 TEST of the photocell emitter 1 (black) Photocell output RX4 32 TEST of the photocell emitter 1 (black) Photocell output RX4 32 TEST of the photocell emitter 1 (black) Photocell output RX4 32 TEST of the photocell emitter 1 (black) Photocell output RX4 32 TEST of the emitter photocell 4 (black) Photocell output RX4 32 TEST of the emitter photocell 4 (black) Photocell output RX4 32 TEST of the emitter photocell 4 (black) Photocell output RX4 34 OVdc photocell receivers 1 and 2 (brown) Power supply output RX4 35 AVdc photocell receivers 1 and 2 (brown) Power supply output RX4 36 OVdc photocell receivers 3 and 4 (brown) Power supply output RX4 36 OVdc photocell emitters 1 and 2 (brown) Power supply output RX4 37 AVdc photocell emitters 1 and 2 (brown) Power supply output RX4 39 AVdc photocell emitters 3 and 4 (brown) Power supply output RX4 40 OVdc photocell emitters 3 and 4 (brown) Power supply output RX4 41 OVdc receivers of light curtain 1 (grey) Light curtain input RX4 42 AVdc photocell emitte	OVRB2	16	Contact of Override B2 NO towards 24Vdc	Override input
SAFNC11 19 NO relay 230V 1 output Safety contact SAFNC21 20 NO relay 230V 1 output Safety contact LAMPB- 21 Negative terminal of the B Muting lamp Muting lamp output LAMPB- 22 Positive terminal of the B Muting lamp Muting lamp output SAFNC12 23 NO relay 230V 2 output Safety contact SAFNC22 24 NO relay 230V 2 output Safety contact RX1 25 PNP output of the photocell receiver 1 (black) Photocell input RX2 26 PNP output of the photocell receiver 3 (black) Photocell input RX3 27 PNP output of the photocell receiver 4 (black) Photocell input RX4 28 PNP output of the photocell emitter 1 (black) Photocell output TX1 29 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell receivers 3 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black)	LAMPA-	17	Negative terminal of the A Muting lamp	Muting lamp output
NO relay 230V1 output LAMPB- 21 Negative terminal of the B Muting lamp Muting lamp output LAMPB+ 22 Positive terminal of the B Muting lamp Muting lamp output SAFNC12 23 NO relay 230V2 output Safety contact RX1 25 PNP output of the photocell receiver 1 (black) Photocell input RX2 26 PNP output of the photocell receiver 2 (black) Photocell input RX3 27 PNP output of the photocell receiver 2 (black) Photocell input RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 1 (black) Photocell output TX3 31 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the emitter photocell emitter 1 (black) Photocell output TX4 32 TEST of the emitter photocell emiter 1 (black) Photocell output TX4 32 TEST of the emitter photocell emiter 1 (black) Photocell output TX4 32 TEST of the emitter photocell emiter 1 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output TX4 32 TEST of the emitter photocell emiter 1 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX12 34 0 Vdc photocell receivers 3 and 4 (brown) Power supply output 0VRX34 36 0Vdc photocell receivers 3 and 4 (blue) Power supply output 24VTX12 37 24Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 1 and 2 (blue) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (blue) Power supply output 0VSSD1 41 0SSD 1 output of the light curtain 1 (grey) Light curtain input 0VSSD1 42 0SSD 2 output of light curtain 1 and 2 (brown) Power supply output 0VSSD1 45 0SSD 2 output of light curtain 1 (pink) Light curtain input 0VSD1 46 0Vdc light curtain emitters 1 and 2 (brown) Power supply	LAMPA+	18	Positive terminal of the A Muting lamp	Muting lamp output
SAFNC21 20 Negative terminal of the B Muting lamp Muting lamp output LAMPB+ 22 Positive terminal of the B Muting lamp Muting lamp output SAFNC12 23 NO relay 230V 2 output Safety contact SAFNC22 24 PNP output of the photocell receiver 1 (black) Photocell input RX1 25 PNP output of the photocell receiver 2 (black) Photocell input RX2 26 PNP output of the photocell receiver 3 (black) Photocell input RX3 27 PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 1 (black) Photocell output TX3 31 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX12 34 0 Vdc photocell receivers 1 and 2 (brown) Power supply output 24VRX34 35 24 Vdc photocell receivers 3 and 4 (brown) Power supply output 0VRX34 36 0 Vdc photocell receivers 3 and 4 (brown) Power supply output 24VTX12 37 24Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX12 38 0 Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX34 40 0 Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX34 40 0 Ovdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0 Ovdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0 Ovdc photocell emitters 1 and 2 (brown) Power supply output 0VSSD1 42 OSSD 1 output of the light curtain 1 (grey) Light curtain input 0SSD1 42 OSSD 1 output of light curtain 1 and 2 (brown) Power supply output 0LRX12 44 0 Vdc receivers of light curtain 1 and 2 (brown) Power supply output 0LRX12 45 OSSD 2 output of light curtain 1 (pink) Light curtain input 0SSD2 46 OSSD 2 output of light curtain 2 (pink) Light curtain input	SAFNC11	19		Safety contact
LAMPB+ 22 Positive terminal of the B Mutting lamp Mutting lamp output SAFNC12 23 NO relay 230V 2 output Safety contact SAFNC22 24 Safety contact RX1 25 PNP output of the photocell receiver 1 (black) Photocell input RX2 26 PNP output of the photocell receiver 2 (black) Photocell input RX3 27 PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell receiver 4 (black) Photocell output TX2 30 TEST of the photocell emitter 1 (black) Photocell output TX3 31 TEST of the photocell emitter 12 (black) Photocell output TX4 32 TEST of the photocell emitter 13 (black) Photocell output TX4 32 TEST of the photocell emitter 12 (black) Photocell output TX4 32 TEST of the photocell emitter 12 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 24VRX12 34 0 Vdc photocell receivers 1 and 2 (blue) Power supply output 24VRX34 35 24 Vdc photocell receivers 3 and 4 (blue) Power supply output 24VRX34 36 0 Vdc photocell receivers 3 and 4 (blue) Power supply output 24VTX12 37 24Vdc photocell emitters 1 and 2 (brown) Power supply output 24VTX12 37 24Vdc photocell emitters 1 and 2 (brown) Power supply output 24VTX34 39 24Vdc photocell emitters 1 and 2 (brown) Power supply output 24VTX34 39 24Vdc photocell emitters 3 and 4 (brown) Power supply output 24VTX34 40 0Vdc photocell emitters 3 and 4 (brown) Power supply output 24VTX34 41 0Vdc photocell emitters 3 and 4 (brown) Power supply output 24VTX34 41 0Vdc photocell emitters 3 and 4 (brown) Power supply output 24VTX34 41 0Vdc photocell emitters 3 and 4 (brown) Power supply output 24VTX34 41 0Vdc photocell emitters 3 and 4 (brown) Power supply output 24VTX34 41 0Vdc photocell emitters 3 and 4 (brown) Power supply output 24VTX34 41 0Vdc photocell emitters 1 and 2 (brown) Power supply output 24VTX34 42 0Vdc photocell emitters 1 and 2 (brown) Power supply output 24VTX34 43 0Vdc photocell emitters 1 and 2 (brown) Power	SAFNC21	20	NO relay 230V 1 output	Safety contact
SAFNC12 23 NO relay 230V 2 output Safety contact SAFNC22 24 SAFNC22 24 SAFNC22 24 SAFNC22 25 PNP output of the photocell receiver 1 (black) Photocell input Photocell input RX2 26 PNP output of the photocell receiver 2 (black) Photocell input RX3 27 PNP output of the photocell receiver 3 (black) Photocell input PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output DVRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output OVRX12 34 0 Vdc photocell receivers 3 and 4 (brown) Power supply output DVRX12 34 0 Vdc photocell receivers 3 and 4 (brown) Power supply output OVRX34 36 0 OVdc photocell emitters 1 and 2 (blue) Power supply output DVRX12 37 24Vdc photocell emitters 3 and 4 (brown) Power supply output DVRX12 38 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX12 38 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVR	LAMPB-	21	Negative terminal of the B Muting lamp	Muting lamp output
SAFNC12 23 NO relay 230V 2 output Safety contact SAFNC22 24 SAFNC22 24 SAFNC22 24 SAFNC22 25 PNP output of the photocell receiver 1 (black) Photocell input Photocell input RX2 26 PNP output of the photocell receiver 2 (black) Photocell input RX3 27 PNP output of the photocell receiver 3 (black) Photocell input PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output DVRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output OVRX12 34 0 Vdc photocell receivers 3 and 4 (brown) Power supply output DVRX12 34 0 Vdc photocell receivers 3 and 4 (brown) Power supply output OVRX34 36 0 OVdc photocell emitters 1 and 2 (blue) Power supply output DVRX12 37 24Vdc photocell emitters 3 and 4 (brown) Power supply output DVRX12 38 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX12 38 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVRX34 40 0 OVdc photocell emitters 3 and 4 (brown) Power supply output DVR	LAMPB+	22		
SAFNC22 24 PNP output of the photocell receiver 2 (black) Photocell input RX2 26 PNP output of the photocell receiver 2 (black) Photocell input RX3 27 PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 2 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX12 34 0 Vdc photocell receivers 1 and 2 (blue) Power supply output 24VRX34 35 24 Vdc photocell receivers 3 and 4 (brown) Power supply output 0VRX34 36 0Vdc photocell receivers 3 and 4 (brown) Power supply output 0VTX12 38 0Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX12 38 0Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX14 39 24Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (brown) Power supply output 0VSSD1 41 0SSD1 output of the light curtain 1 (grey) Light curtain input 0SSD21 42 OSSD 1 output of the light curtain 1 (grey) Light curtain input 0SSD21 42 OSSD 1 output of the light curtain 1 (pink) Light curtain input 0SSD22 46 OSSD 2 output of light curtain 1 (pink) Light curtain input 0SSD22 46 OSSD 2 output of light curtain 1 (pink) Light curtain input 0VTX12 48 0Vdc light curtain emitters 1 and 2 (brown) Power supply output	SAFNC12	23		
RX1 25 PNP output of the photocell receiver 1 (black) Photocell input RX2 26 PNP output of the photocell receiver 2 (black) Photocell input RX3 27 PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 13 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX12 34 0 Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX34 35 24 Vdc photocell receivers 3 and 4 (brown) Power supply output 0VRX34 36 0Vdc photocell receivers 3 and 4 (blue) Power supply output 0VRX34 36 0Vdc photocell emitters 1 and 2 (brown) Power supply output 0VRX34 36 0Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX12 38 0Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX14 39 24Vdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 41 0SSD 1 output of the light curtain 1 (grey) Light curtain input 0VSSD11 41 0SSD 1 output of the light curtain 2 (grey) Light curtain input 0VSSD1 42 0SSD 1 output of the light curtain 1 and 2 (brown) Power supply output 0VSSD1 45 0SSD 2 output of light curtain 1 (pink) Light curtain input 0VSSD2 46 0SSD 2 output of light curtain 1 (pink) Light curtain input 0VSSD2 46 0SSD 2 output of light curtain 1 and 2 (brown) Power supply output	SAFNC22	24	NO relay 230V 2 output	·
RX2 26 PNP output of the photocell receiver 2 (black) Photocell input RX3 27 PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX12 34 0 Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX34 35 24 Vdc photocell receivers 3 and 4 (brown) Power supply output 0VRX34 36 0Vdc photocell receivers 3 and 4 (blue) Power supply output 24VRX34 36 0Vdc photocell receivers 3 and 4 (blue) Power supply output 0VTX12 37 24Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX12 38 0Vdc photocell emitters 1 and 2 (brown) Power supply output 24VTX34 39 24Vdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 41 0SSD 1 output of the light curtain 1 (grey) Light curtain input 0SSD11 41 0SSD 1 output of the light curtain 1 (grey) Light curtain input 0SSD11 41 0SSD 1 output of the light curtain 1 (grey) Power supply output 0SSD12 45 0SSD 2 output of light curtain 1 and 2 (brown) Power supply output 0SSD12 45 0SSD 2 output of light curtain 1 (pink) Light curtain input 0SSD22 46 0SSD 2 output of light curtain 1 (pink) Light curtain input 0SSD22 46 0SSD 2 output of light curtain 2 (pink) Light curtain input 0VTX12 48 0Vdc light curtain emitters 1 and 2 (brown) Power supply output	RX1	25	PNP output of the photocell receiver 1 (black)	<u> </u>
RX3 27 PNP output of the photocell receiver 3 (black) Photocell input RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 1 3 (black) Photocell output TX4 32 TEST of the photocell emitter 1 3 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX12 34 0 Vdc photocell receivers 1 and 2 (brown) Power supply output 24VRX34 35 24 Vdc photocell receivers 3 and 4 (brown) Power supply output 0VRX34 36 0 OVdc photocell receivers 3 and 4 (blue) Power supply output 24VTX12 37 24Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX12 38 0 OVdc photocell emitters 1 and 2 (blue) Power supply output 24VTX34 39 24Vdc photocell emitters 1 and 2 (blue) Power supply output 0VTX34 40 0 OVdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 40 0 OVdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 41 OSSD 1 output of the light curtain 1 (grey) Light curtain input 0SSD11 41 OSSD 1 output of the light curtain 2 (grey) Light curtain input 0SSD21 42 OSSD 1 output of the light curtain 1 and 2 (brown) Power supply output 0VSD12 44 0Vdc receivers of light curtain 1 and 2 (brown) Power supply output 0SSD12 45 OSSD 2 output of light curtain 1 (pink) Light curtain input 0SSD22 46 OSSD 2 output of light curtain 1 (pink) Light curtain input 0SSD22 46 OSSD 2 output of light curtain 2 (pink) Light curtain input 0UTX12 48 0Vdc light curtain emitters 1 and 2 (brown) Power supply output	RX2	26		Photocell input
RX4 28 PNP output of the photocell receiver 4 (black) Photocell input TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX12 34 0 Vdc photocell receivers 1 and 2 (blue) Power supply output 24VRX34 35 24 Vdc photocell receivers 3 and 4 (brown) Power supply output 0VRX34 36 0Vdc photocell receivers 3 and 4 (blue) Power supply output 24VTX12 37 24Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX12 38 0Vdc photocell emitters 1 and 2 (blue) Power supply output 0VTX12 38 0Vdc photocell emitters 1 and 2 (blue) Power supply output 0VTX34 39 24Vdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 41 0SSD 1 output of the light curtain 1 (grey) Light curtain input 0SSD11 41 0SSD 1 output of the light curtain 2 (grey) Light curtain input 0SSD21 42 0SSD 1 output of the light curtain 1 and 2 (brown) Power supply output 0CSD12 45 0SSD 2 output of light curtain 1 and 2 (brown) Power supply output 0SSD22 46 0SSD 2 output of light curtain 1 (pink) Light curtain input 0CSSD22 46 0SSD 2 output of light curtain 2 (pink) Light curtain input 0CTX12 48 0Vdc light curtain emitters 1 and 2 (brown) Power supply output	RX3	27		· · · · · · · · · · · · · · · · · · ·
TX1 29 TEST of the photocell emitter 1 (black) Photocell output TX2 30 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the photocell emitter 1 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX12 34 0 Vdc photocell receivers 1 and 2 (blue) Power supply output 24VRX34 35 24 Vdc photocell receivers 3 and 4 (brown) Power supply output 0VRX34 36 0 OVdc photocell receivers 3 and 4 (blue) Power supply output 24VTX12 37 24Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX12 38 0 OVdc photocell emitters 1 and 2 (brown) Power supply output 0VTX12 38 0 OVdc photocell emitters 1 and 2 (blue) Power supply output 0VTX34 39 24Vdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 40 0 OVdc photocell emitters 3 and 4 (blue) Power supply output 0VTX34 41 0 OSSD 1 output of the light curtain 1 (grey) Light curtain input 0SSD11 41 OSSD 1 output of the light curtain 2 (grey) Light curtain input 0SSD21 42 OSSD 1 output of the light curtain 1 and 2 (brown) Power supply output 0VXX12 43 24Vdc receivers of light curtain 1 and 2 (brown) Power supply output 0SSD12 45 OSSD 2 output of light curtain 1 and 2 (brown) Power supply output 0SSD12 46 OSSD 2 output of light curtain 2 (pink) Light curtain input 0SSD22 46 OSSD 2 output of light curtain 2 (pink) Light curtain input 0SSD24 47 24Vdc light curtain emitters 1 and 2 (brown) Power supply output	RX4	28		· · · · · · · · · · · · · · · · · · ·
TX2 30 TEST of the photocell emitter 2 (black) Photocell output TX3 31 TEST of the photocell emitter 1 3 (black) Photocell output TX4 32 TEST of the emitter photocell 4 (black) Photocell output 24VRX12 33 24Vdc photocell receivers 1 and 2 (brown) Power supply output 0VRX12 34 0 Vdc photocell receivers 1 and 2 (blue) Power supply output 24VRX34 35 24 Vdc photocell receivers 3 and 4 (brown) Power supply output 0VRX34 36 0Vdc photocell receivers 3 and 4 (blue) Power supply output 24VTX12 37 24Vdc photocell emitters 1 and 2 (brown) Power supply output 0VTX12 38 0Vdc photocell emitters 1 and 2 (brown) Power supply output 24VTX34 39 24Vdc photocell emitters 3 and 4 (brue) Power supply output 0VTX34 39 24Vdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (brown) Power supply output 0VTX34 40 0Vdc photocell emitters 3 and 4 (brue) Power supply output 0SSD11 41 OSSD 1 output of the light curtain 1 (grey) Light curtain input 0SSD21 42 OSSD 1 output of the light curtain 2 (grey) Light curtain input 0LRX12 43 24Vdc receivers of light curtain 1 and 2 (brown) Power supply output 0SSD12 45 OSSD 2 output of light curtain 1 (pink) Light curtain input 0SSD22 46 OSSD 2 output of light curtain 2 (pink) Light curtain input 0SSD24 47 24Vdc light curtain emitters 1 and 2 (brown) Power supply output 0SSD24 48 OVdc light curtain emitters 1 and 2 (brown) Power supply output	TX1	29		•
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NOTE: Both SG-BWS-T4 and SG-BWS-T4-MT models are equipped with extractable screw clamps. It's possible to replace them with corresponding spring clamps provided as accessories, if necessary.

TECHNICAL DATA

ELECTRICAL DATA	SG-BWS-T4	SG-BWS-T4-MT
	** = ***	
Power supply:	24 Vdc ± 15%	24 Vdc ± 15%
Consumption:	2.1 W max	3.8 W max
Output contacts:	2 PNP	2 normally open relays, 250 Vac 5A - 24 Vdc 5A
Response time:	Short circuit protection: 1.4 A max	39ms (includes response time of photocells)
Safety category:	Type 4 (ref. EN 61496-1)	Type 4 (ref. EN 61496-1)
SIL:	SIL 3 (ref. IEC 61508 and IEC 62061)	SIL 3 (ref. IEC 61508 and IEC 62061)
PL:	PL e (ref. EN ISO 13849-1)	PL e (ref. EN ISO 13849-1)
PFHd min (1/h):	1,60E-09	1,74E-09
MTTFd (years):	545	428
Accessory functions:	Reset / EDM selection / auto-man selection	Reset / EDM selection / auto-man selection Single/Double Muting selection Edged/Triggered Override Selection
Overload protection:		Cat. II (250 Vac) – Cat. III (24Vdc) (ref. EN 50178)
Connections:	Clamps (*)	Clamps (*)
Cable lengths (power supply):	50 m. max	50 m. max
Pollution degree:	2	2
MECHANICAL AND ENVIRONM	ENTAL DATA	
Operating temperature:	055°C	055°C
Storage temperature:	-25+ 70 °C	-25+ 70 °C
Temperature class:	T6	T6
Humidity:	1595 % (no condensation)	1595 % (no condensation)
Mechanical protection:	IP 20 (EN 60529)	IP 20 (EN 60529)
Vibrations:	0.35 mm amplitude, 10 55Hz frequency 20 sweeps for axis, 1octave/min (EN 60068-2-6)	0.35 mm amplitude, 10 55Hz frequency 20 sweeps per axis, 1octave/min (EN 60068-2-6)
Shock resistance:	16 ms (10 G) 1.000 shocks for axis (EN 60068-2-29)	16 ms (10 G) 1.000 shocks for axis (EN 60068-2-29)
Housing material:	Nylon PA66	Nylon PA66
Weight:		

(*) Spring clamps are available as accessories







MODEL SELECTION TABLE

MODEL	DESCRIPTION	ORDER N°
SG-BWS-T4	cat. 4 safety control unit with edm and man/auto restart	957051000
SG-BWS-T4-MT	cat. 4 safety control unit with double muting	957051010

ACCESSORY SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	ORDER N°
SG-DM 150	deviating mirror h=150mm	95ASE1670
LMS	muting lamp	95ASE1830
LMS-1	modular muting lamp	95ACC1990
LMS-2	muting lamp – horizontal mounting	95ACC2000
LMS-3	muting lamp - vertical mounting	95ACC2010
SU-LMS-1A	base module for lms-1	95ACC2020
SU-LMS-1B	tower module for lms-1	95ACC2030











The company endeavours to continuously improve and renew its products; for this reason the technical data and contents of this catalogue may undergo variations without prior notice. For correct installation and use, the company can guarantee only the data indicated in the instruction manual supplied with the products.