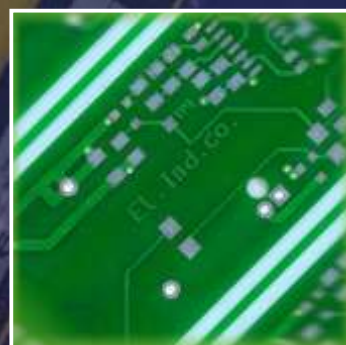


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DESIGN AND MANUFACTURE
OPTOELECTRONIC SAFETY DEVICES



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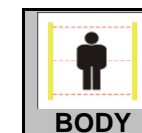
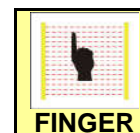
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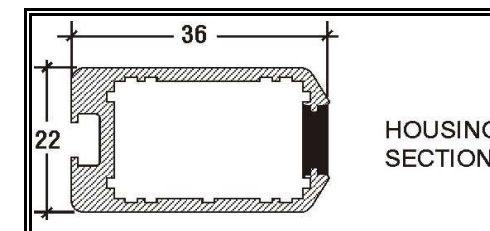
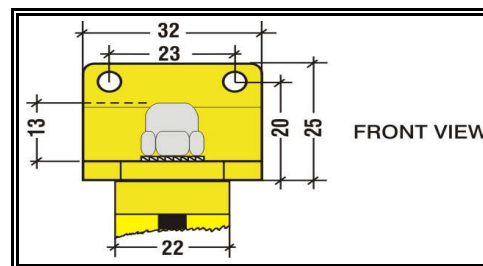
5 ^ Edition September 2016

Table protected heights and total heights for the light curtain Model LC3 PXXX Fixing SMO

	Resolution	P001	P018	P036	P040	P080	P120	P150	P160	P200	P240	P280
Nr. Beam	Response time	Height (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)
1	10 ms	190										
2 x 2	12 ms						240	365	300	425	320	445
3 x 3	14 ms			144	269	160	285	320	445	480	605	560
4 x 4	16 ms									800	925	1120
5 x 5	18 ms									1200	1325	1440
6 x 6	20 ms									1600	1725	1840
7 x 7	22 ms									2000	2125	2245
8 x 8	24 ms											
9 x 9	26 ms											
10 x 10	28 ms											
11 x 11	30 ms											
12 x 12	32 ms											
13 x 13	34 ms											
14 x 14	36 ms											
15 x 15	38 ms											
16 x 16	40 ms											
17 x 17	42 ms											
18 x 18	44 ms											
19 x 19	46 ms											
20 x 20	48 ms											
21 x 21	50 ms											
22 x 22	52 ms											
23 x 23	54 ms											
24 x 24	56 ms											
25 x 25	58 ms											
26 x 26	60 ms											
27 x 27	62 ms											
28 x 28	64 ms											
29 x 29	66 ms											
30 x 30	68 ms											
31 x 31	70 ms											
32 x 32	72 ms											
33 x 33	74 ms											
34 x 34	76 ms											
35 x 35	78 ms											
36 x 36	80 ms											



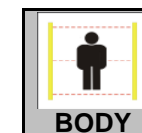
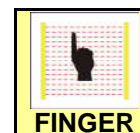
HP= Protected Height
HT= Total Height including orientable support brackets (SMO)
PXXX= Resolution of the light curtain (ES: P040= resolution 40mm)



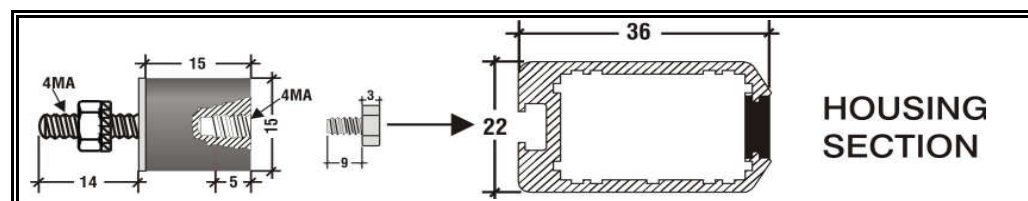
Note: In the columns all the important dimensions for the various sizes are reported. For the hole interaxes 10 mm are to be deducted from the total height. On the drawings are indicated the quote for fixing holes.

Table protected heights and total heights for the light curtain Model LC3 PXXX Fixing SEA

	Resolution	P001	P018	P036	P040	P080	P120	P150	P160	P200	P240	P280
Nr. Beam	Response time	Height (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)	Height (HP) (HT)
1	10 ms	140										
2 x 2	12 ms						240	315	300	375	320	395
3 x 3	14 ms			144	219	160	235	320	395	480	555	480
4 x 4	16 ms									400	475	480
5 x 5	18 ms									800	875	960
6 x 6	20 ms									1200	1275	1440
7 x 7	22 ms									1600	1675	1920
8 x 8	24 ms									2000	2075	2400
9 x 9	26 ms											
10 x 10	28 ms											
11 x 11	30 ms											
12 x 12	32 ms											
13 x 13	34 ms											
14 x 14	36 ms											
15 x 15	38 ms											
16 x 16	40 ms											
17 x 17	42 ms											
18 x 18	44 ms											
19 x 19	46 ms											
20 x 20	48 ms											
21 x 21	50 ms											
22 x 22	52 ms											
23 x 23	54 ms											
24 x 24	56 ms											
25 x 25	58 ms											
26 x 26	60 ms											
27 x 27	62 ms											
28 x 28	64 ms											
29 x 29	66 ms											
30 x 30	68 ms											
31 x 31	70 ms											
32 x 32	72 ms											
33 x 33	74 ms											
34 x 34	76 ms											
35 x 35	78 ms											
36 x 36	80 ms											



HP= Protected Height
HT= Total Light curtain Height excluded M12 plug (SEA)
PXXX= Resolution of the light curtain (ES: P040= resolution 40mm)



Note: In the columns all the important dimensions for the various sizes are reported.



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Lissone 05/03/2016

LC3 - P001

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution **monoray**

Range **0 ÷ 30 meters**

Output **2 switches - ON/OFF**

Directives **2006/42/EC - 2014/30/EC - 2014/35/EC**

Standards **CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014**

Certificate **N.0068/ETI - MAC/029-2015**

Light curtain Type 3 (*) self resetting with :

- **EDM** function = External Device Monitoring

- **TEST INPUT**

- **SRS** = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to **TYPE 4** through a control unit BOX2/4 which implements the following functions :

- **Outputs** 2 switches 5A/250V (safety relays)

- **Led Diagnostic** for failures signalling

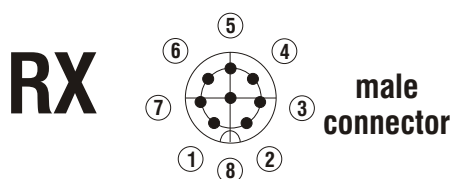
- **EDM** (External Device Monitoring)

- **Contact AUX (Auxiliary) NC** normally closed

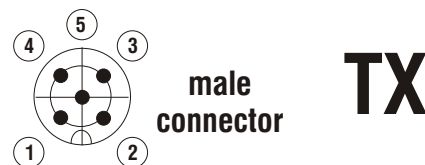
PROTECTED AREAS HEIGHT

Product Code		Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P001		190	140	10	1

Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


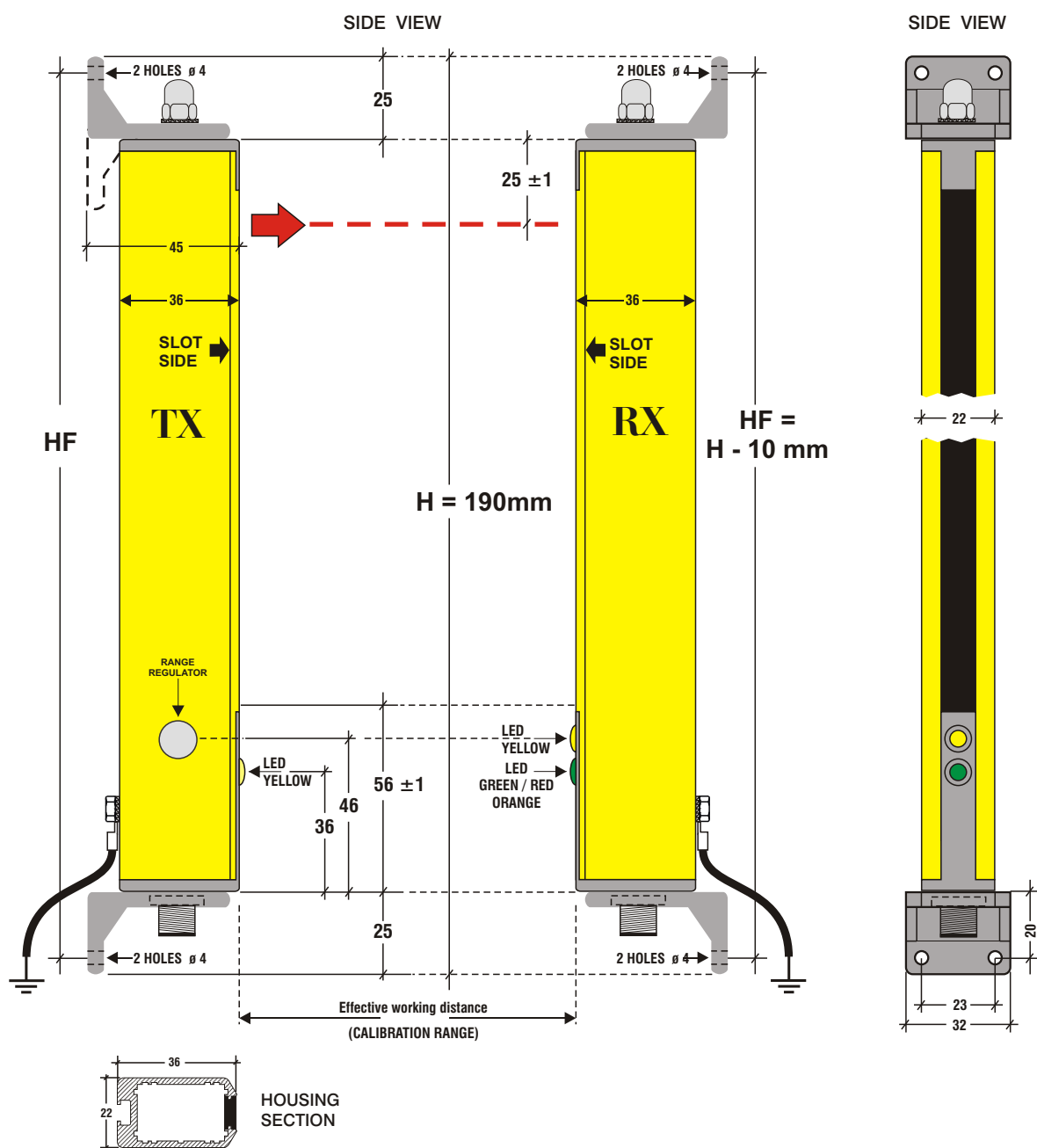
- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE



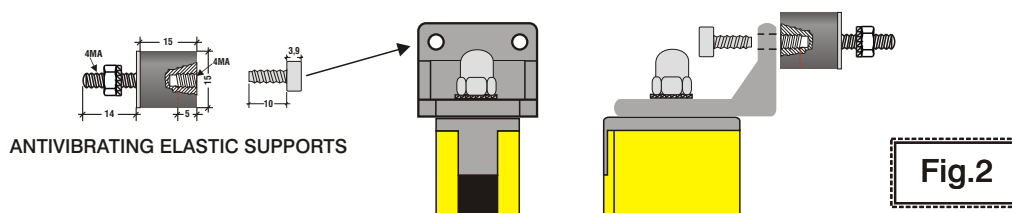
- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

Fig.1

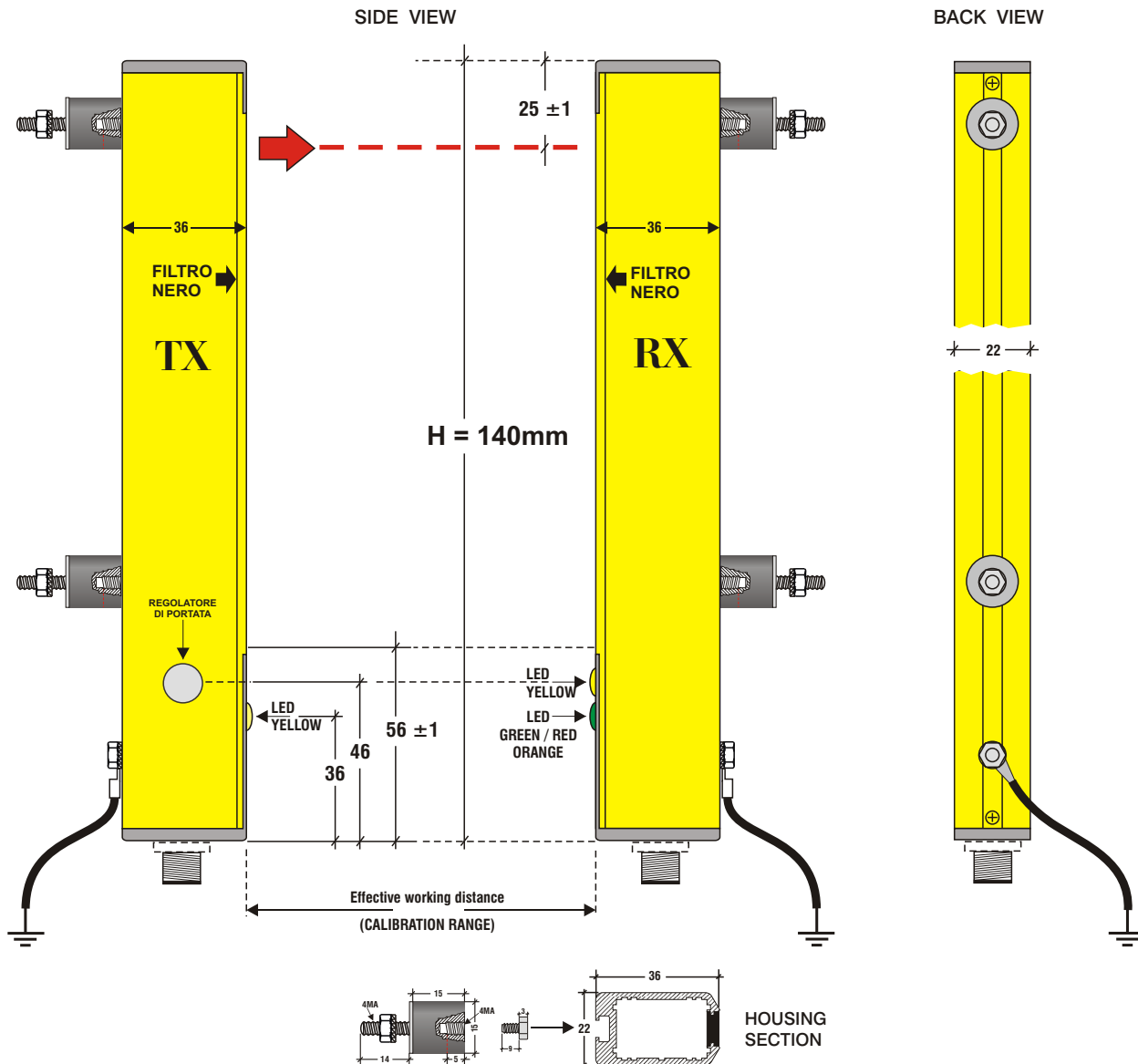


Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H , are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P001	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	<div>1</div> <div>2</div> <div>3</div> <div>4</div>	<div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> <div>12</div> <div>13</div> <div>14</div>

Example

LC3 - P001 - 1000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---



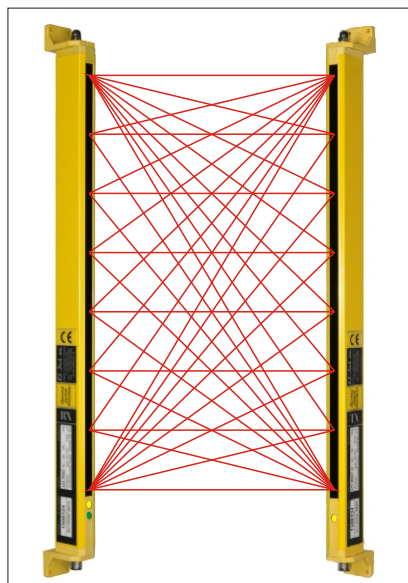
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LC3 - P018

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 18 mm - finger

Protected Height 108 ÷ 1260 mm

Range HP ÷ 16 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3 (*) self resetting with :

- EDM function = External Device Monitoring

- TEST INPUT

- SRS = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to TYPE 4 through a control unit BOX 2/4 which implements the following functions :

- Outputs 2 switches 5A/250V (safety relays)

- Led Diagnostic for failures signalling

- EDM (External Device Monitoring)

- Contact AUX (Auxiliary) NC normally closed

PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P018	108	233	183	16	4x4
LC3 - P018	144	269	219	18	5x5
LC3 - P018	180	305	255	20	6x6
LC3 - P018	216	341	291	22	7x7
LC3 - P018	252	377	327	24	8x8
LC3 - P018	288	413	363	26	9x9
LC3 - P018	324	449	399	28	10x10
LC3 - P018	360	485	435	30	11x11
LC3 - P018	396	521	471	32	12x12
LC3 - P018	432	557	507	34	13x13
LC3 - P018	468	593	543	36	14x14
LC3 - P018	504	629	579	38	15x15
LC3 - P018	540	665	615	40	16x16
LC3 - P018	576	701	651	42	17x17
LC3 - P018	612	737	687	44	18x18
LC3 - P018	648	773	723	46	19x19
LC3 - P018	684	809	759	48	20x20
LC3 - P018	720	845	795	50	21x21
LC3 - P018	756	881	831	52	22x22
LC3 - P018	792	917	867	54	23x23
LC3 - P018	828	953	903	56	24x24
LC3 - P018	864	989	939	58	25x25
LC3 - P018	900	1025	975	60	26x26
LC3 - P018	936	1061	1011	62	27x27
LC3 - P018	972	1097	1047	64	28x28
LC3 - P018	1008	1133	1083	66	29x29
LC3 - P018	1044	1169	1119	68	30x30
LC3 - P018	1080	1205	1155	70	31x31
LC3 - P018	1116	1241	1191	72	32x32
LC3 - P018	1152	1277	1227	74	33x33
LC3 - P018	1188	1313	1263	76	34x34
LC3 - P018	1224	1349	1299	78	35x35
LC3 - P018	1260	1385	1335	80	36x36

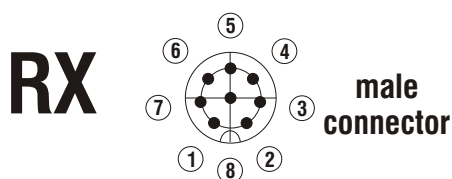


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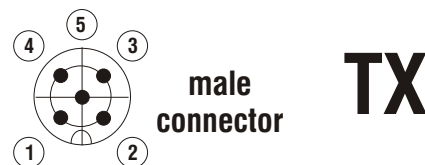
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Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE



- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

VERSION MOUNTING SOLUTION "SMO" (STANDARD)

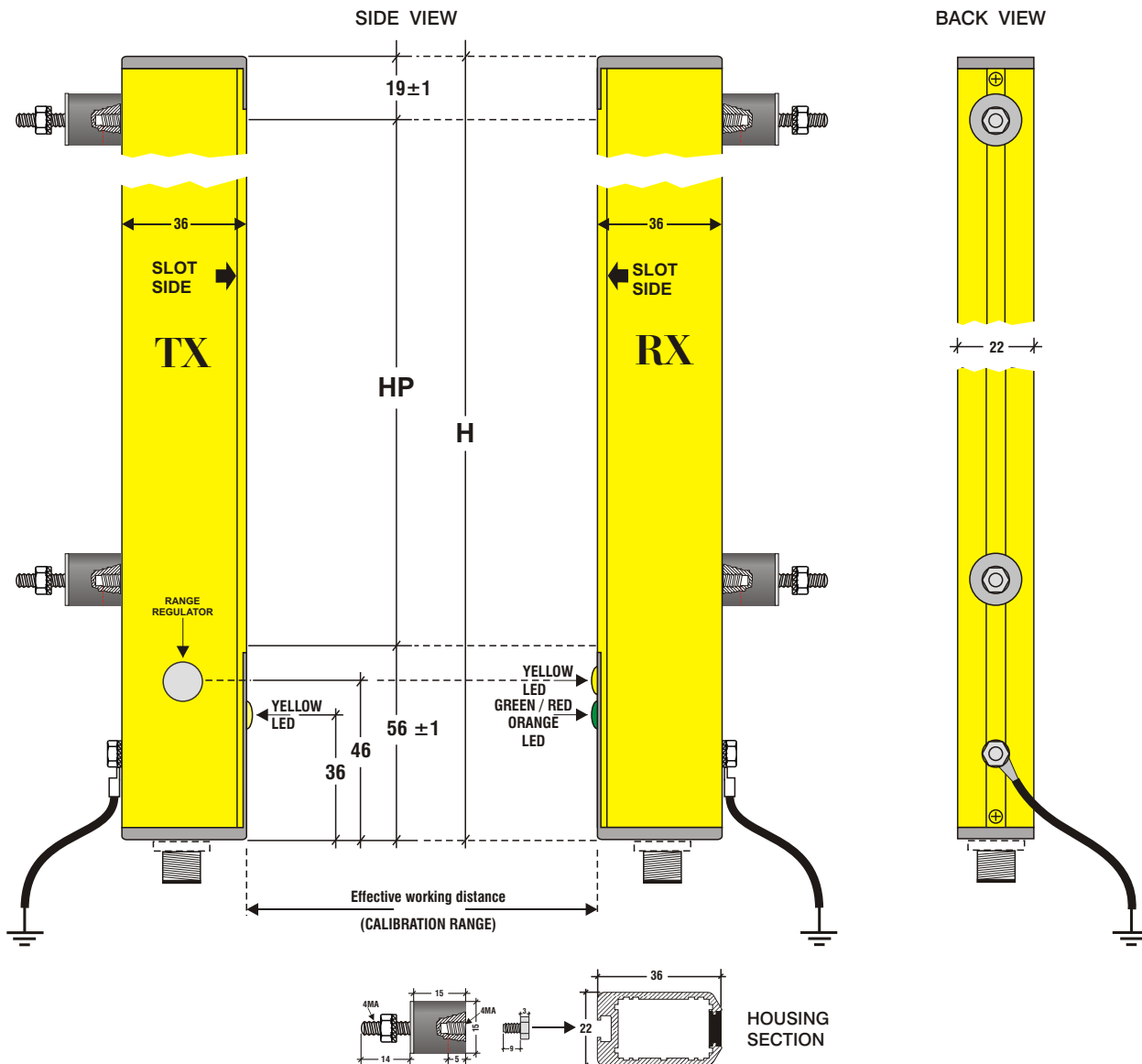


ANTIVIBRATING ELASTIC SUPPORTS

Fig.2

VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H , are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P018	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters	1 2 3 4	5 9 13 6 10 14 7 11 8 12

Example

LC3 - P018 - 216 - 1000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---



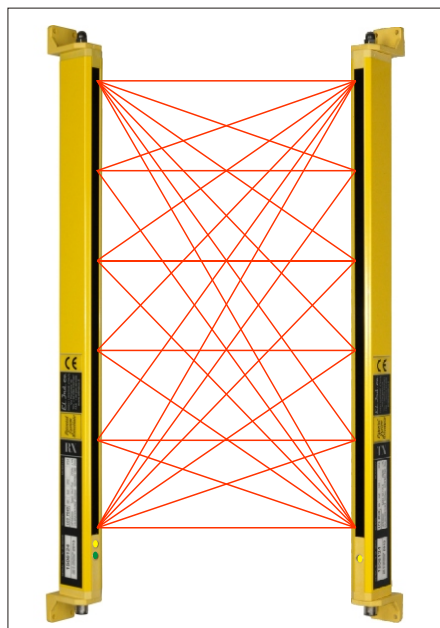
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LC3 - P036

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 36 mm - hand

Protected Height 144 ÷ 2088 mm

Range HP ÷ 16 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3(*) self resetting with :

- EDM function = External Device Monitoring

- TEST INPUT

- SRS = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to TYPE 4 through a control unit BOX2/4 which implements the following functions :

- Outputs 2 switches 5A/250V (safety relays)

- EDM (External Device Monitoring)

- Led Diagnostic for failures signalling

- Contact AUX (Auxiliary) NC normally closed

PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P036	144	269	219	14	3x3
LC3 - P036	216	341	291	16	4x4
LC3 - P036	288	413	363	18	5x5
LC3 - P036	360	485	435	20	6x6
LC3 - P036	432	557	507	22	7x7
LC3 - P036	504	629	579	24	8x8
LC3 - P036	576	701	651	26	9x9
LC3 - P036	648	773	723	28	10x10
LC3 - P036	720	845	795	30	11x11
LC3 - P036	792	917	867	32	12x12
LC3 - P036	864	989	939	34	13x13
LC3 - P036	936	1061	1011	36	14x14
LC3 - P036	1008	1133	1083	38	15x15
LC3 - P036	1080	1205	1155	40	16x16
LC3 - P036	1152	1277	1227	42	17x17
LC3 - P036	1224	1349	1299	44	18x18
LC3 - P036	1296	1421	1371	46	19x19
LC3 - P036	1368	1493	1443	48	20x20
LC3 - P036	1440	1565	1515	50	21x21
LC3 - P036	1512	1637	1587	52	22x22
LC3 - P036	1584	1709	1659	54	23x23
LC3 - P036	1656	1781	1731	56	24x24
LC3 - P036	1728	1853	1803	58	25x25
LC3 - P036	1800	1925	1875	60	26x26
LC3 - P036	1872	1997	1947	62	27x27
LC3 - P036	1944	2069	2019	64	28x28
LC3 - P036	2016	2141	2091	66	29x29
LC3 - P036	2088	2213	2163	68	30x30

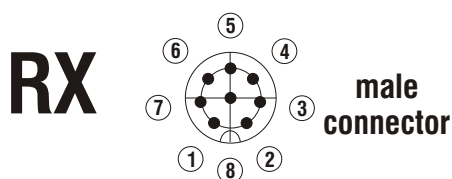


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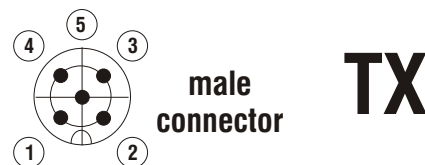
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Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE

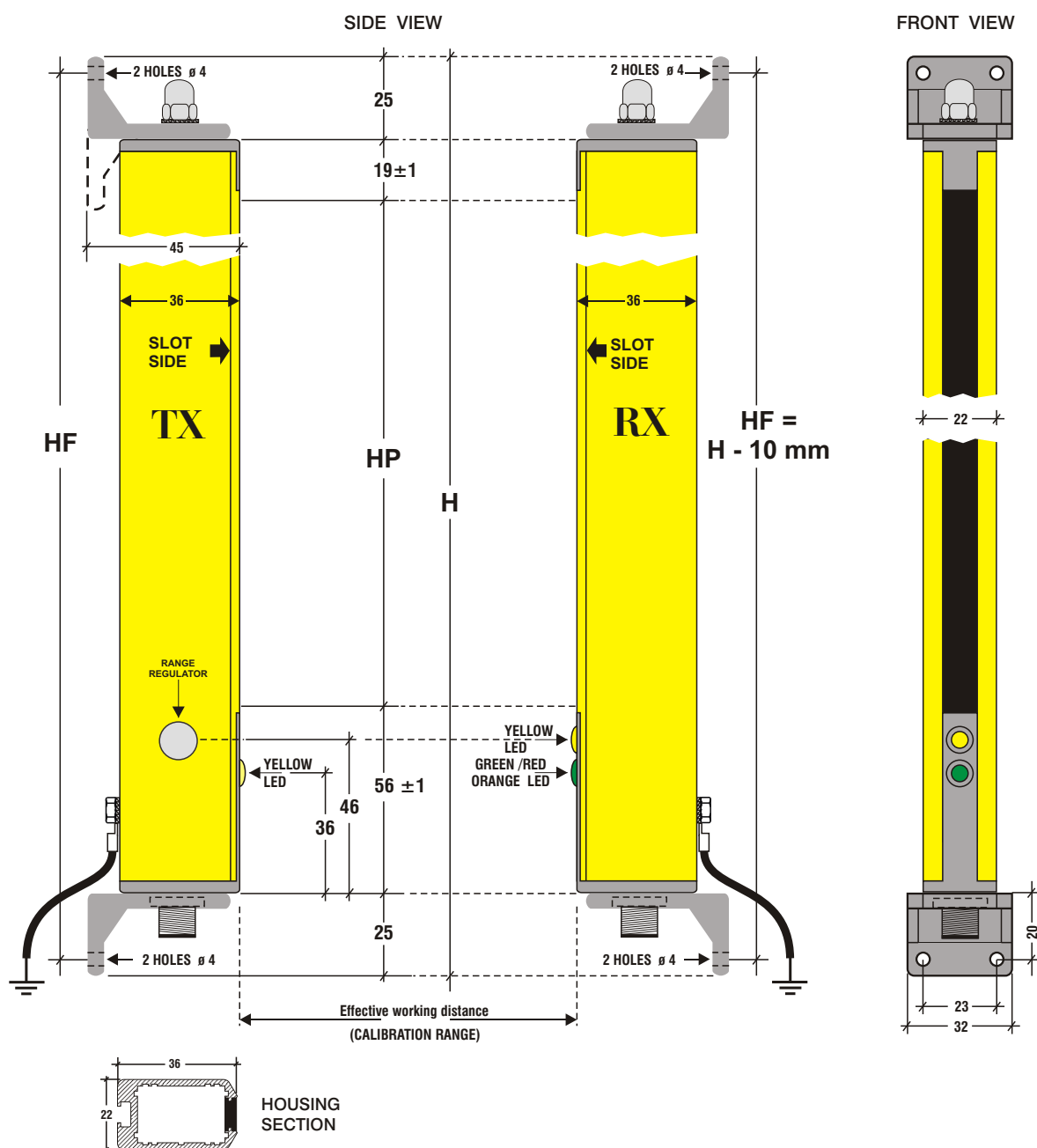


- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

VERSION MOUNTING SOLUTION "SMO" (STANDARD)

Fig.1



KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.

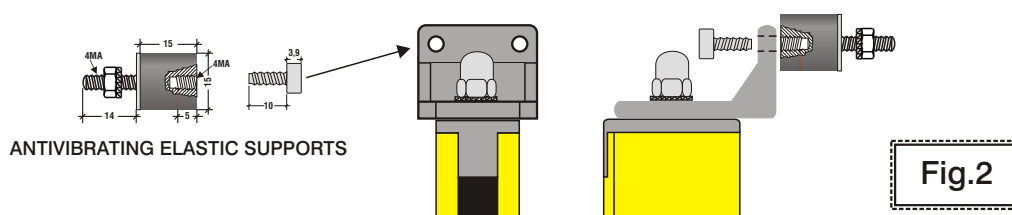
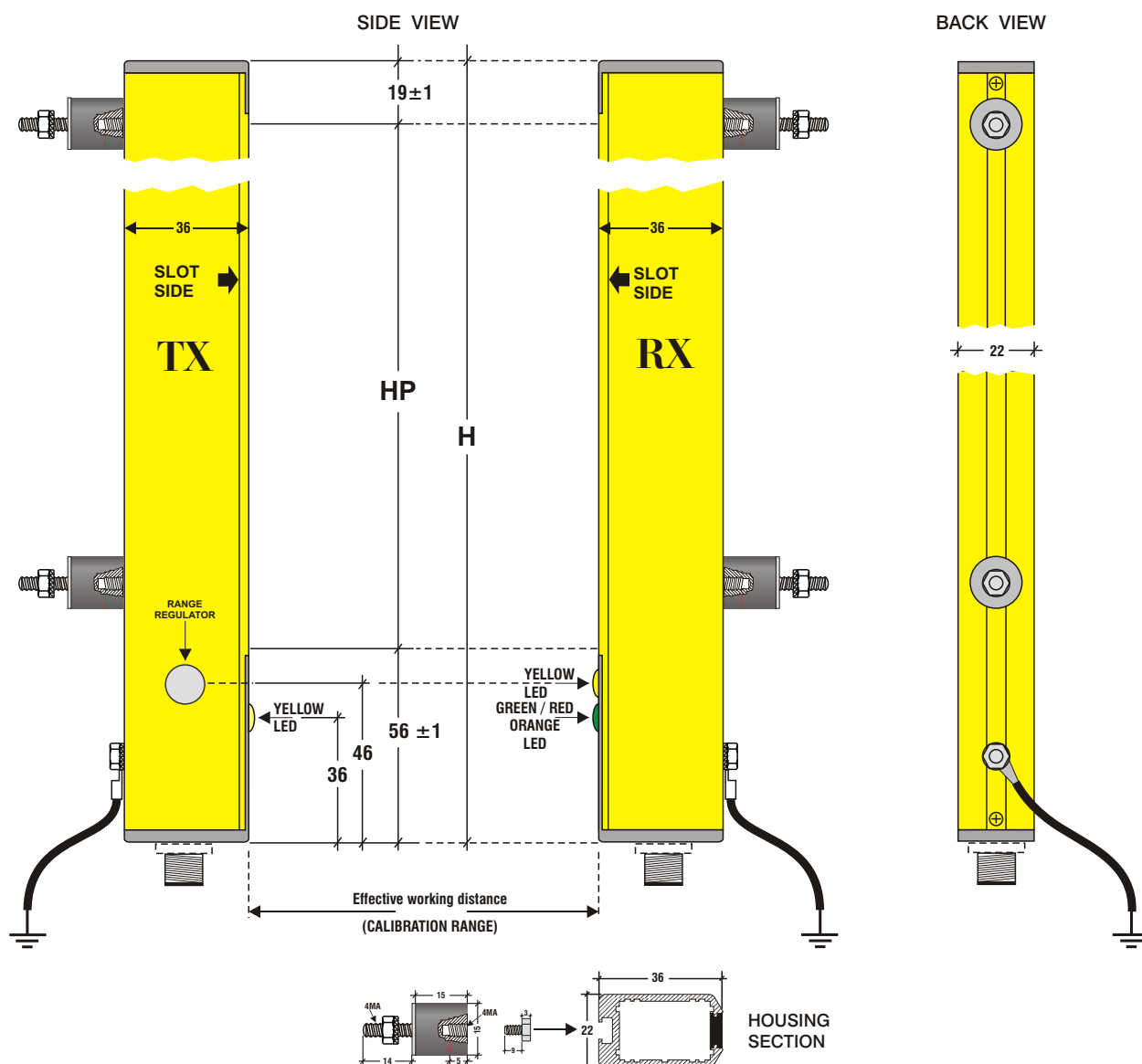


Fig.2

VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H , are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P036	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters	<div>1</div> <div>2</div> <div>3</div> <div>4</div>	<div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> <div>12</div> <div>13</div> <div>14</div>

Example

LC3 - P036 - 720 - 1000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---



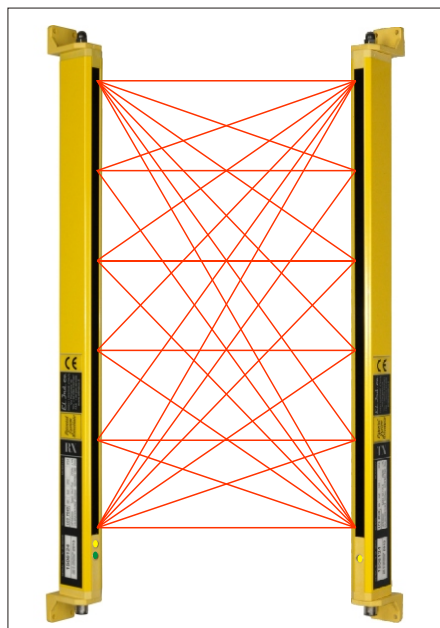
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LC3 - P040

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 40 mm - hand

Protected Height 160 ÷ 2320 mm

Range HP ÷ 30 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3(*) self resetting with :

- EDM function = External Device Monitoring

- TEST INPUT

- SRS = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to TYPE 4 through a control unit BOX2/4 which implements the following functions :

- Outputs 2 switches 5A/250V (safety relays)

- EDM (External Device Monitoring)

- Led Diagnostic for failures signalling

- Contact AUX (Auxiliary) NC normally closed

PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P040	160	285	235	14	3x3
LC3 - P040	240	365	315	16	4x4
LC3 - P040	320	445	395	18	5x5
LC3 - P040	400	525	475	20	6x6
LC3 - P040	480	605	555	22	7x7
LC3 - P040	560	685	635	24	8x8
LC3 - P040	640	765	715	26	9x9
LC3 - P040	720	845	795	28	10x10
LC3 - P040	800	925	875	30	11x11
LC3 - P040	880	1005	955	32	12x12
LC3 - P040	960	1085	1035	34	13x13
LC3 - P040	1040	1165	1115	36	14x14
LC3 - P040	1120	1245	1195	38	15x15
LC3 - P040	1200	1325	1275	40	16x16
LC3 - P040	1280	1405	1355	42	17x17
LC3 - P040	1360	1485	1435	44	18x18
LC3 - P040	1440	1565	1515	46	19x19
LC3 - P040	1520	1645	1595	48	20x20
LC3 - P040	1600	1725	1675	50	21x21
LC3 - P040	1680	1805	1755	52	22x22
LC3 - P040	1760	1885	1835	54	23x23
LC3 - P040	1840	1965	1915	56	24x24
LC3 - P040	1920	2045	1995	58	25x25
LC3 - P040	2000	2125	2075	60	26x26
LC3 - P040	2080	2205	2155	62	27x27
LC3 - P040	2160	2285	2235	64	28x28
LC3 - P040	2240	2365	2315	66	29x29
LC3 - P040	2320	2445	2395	68	30x30



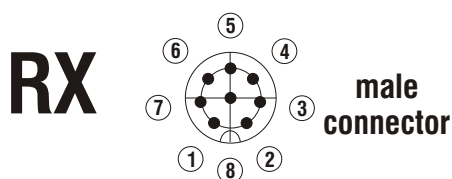
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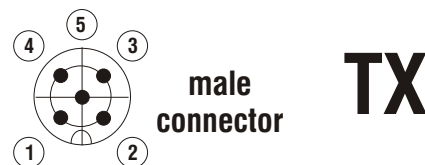
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Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE

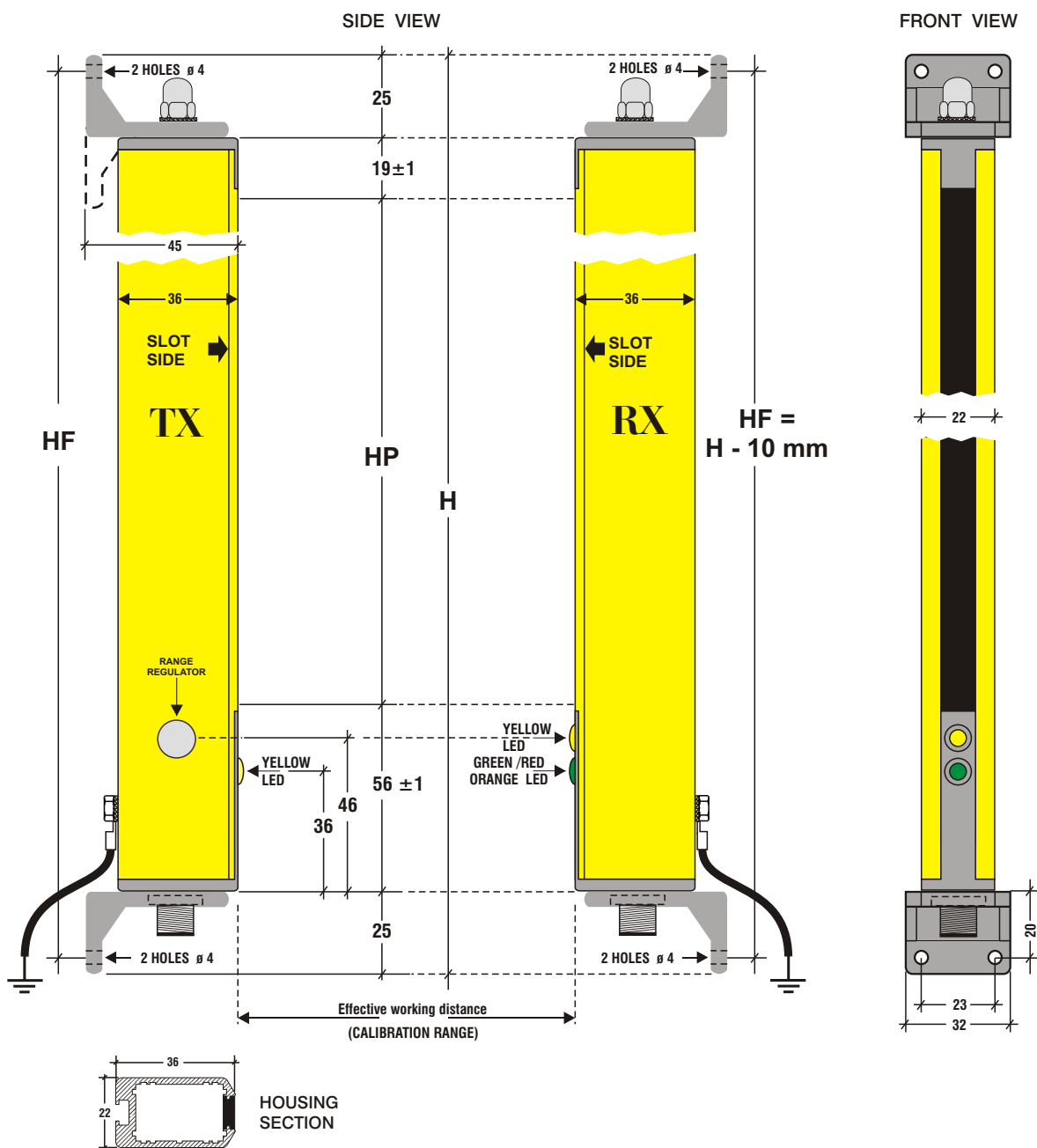


- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

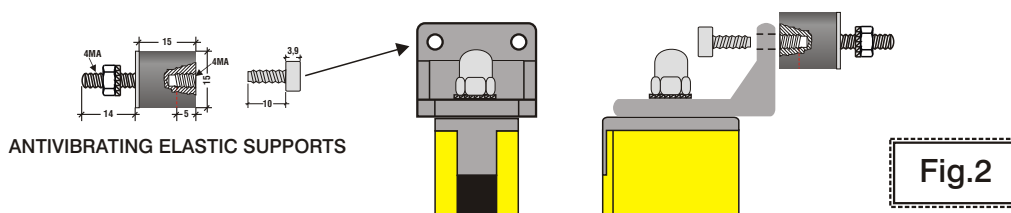
Fig.1

VERSION MOUNTING SOLUTION "SMO" (STANDARD)



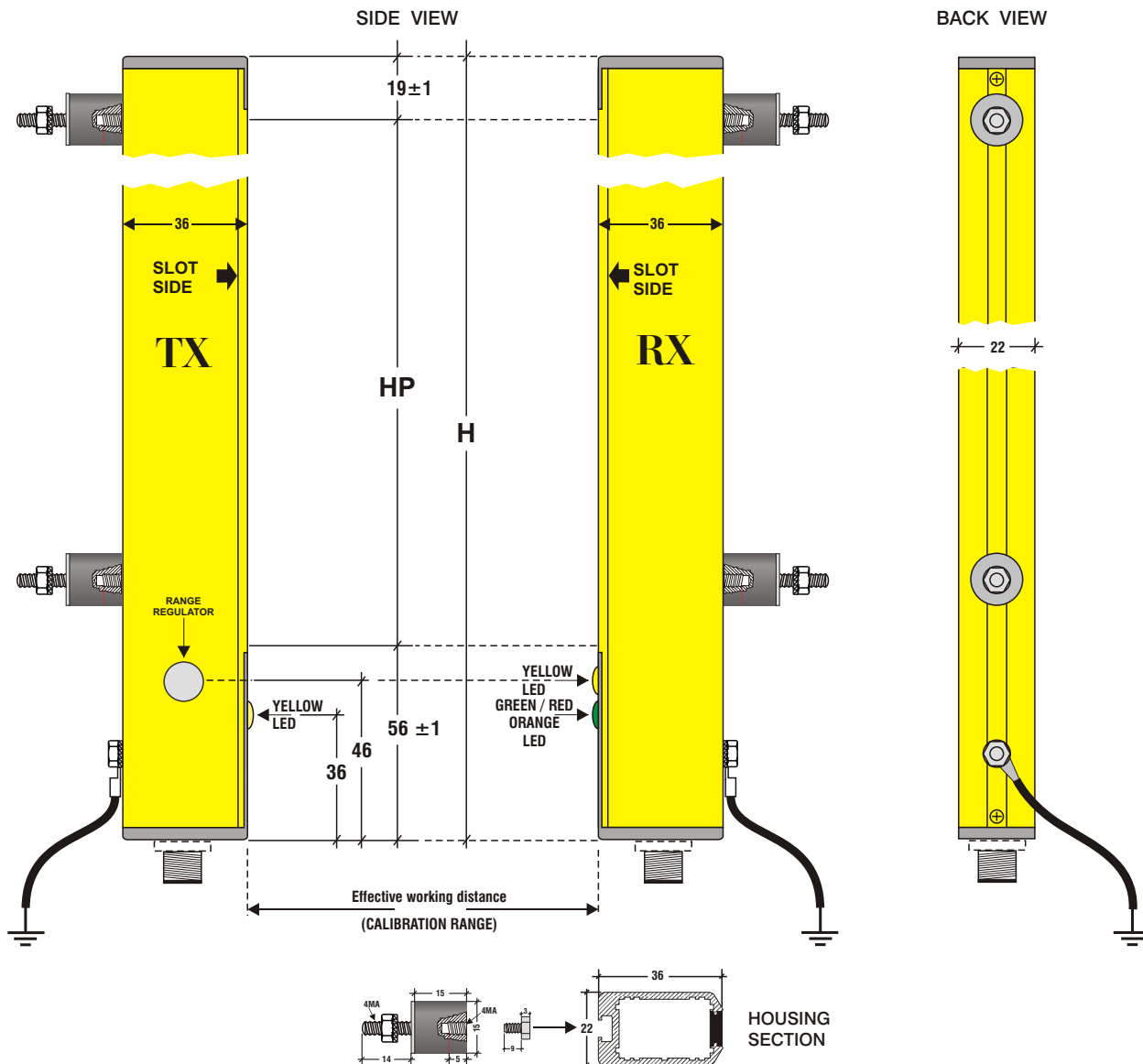
KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H, are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P040	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	<div>1</div> <div>2</div> <div>3</div> <div>4</div>	<div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> <div>12</div> <div>13</div> <div>14</div>

Example

LC3 - P040 - 320 - 1000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---



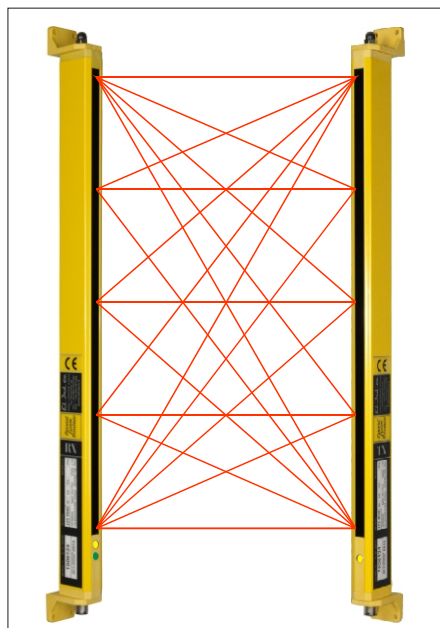
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LC3 - P080

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 80 mm - arm

Protected Height 320 ÷ 1920 mm

Range HP ÷ 30 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3 (*) self resetting with :

- **EDM** function = External Device Monitoring

- **TEST INPUT**

- **SRS** = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to **TYPE 4** through a control unit BOX2/4 which implements the following functions :

- **Outputs** 2 switches 5A/250V (safety relays)

- **EDM** (External Device Monitoring)

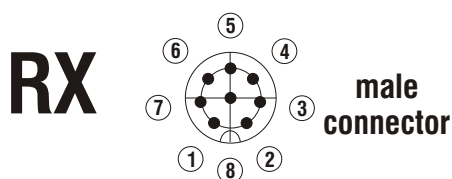
- **Led Diagnostic** for failures signalling

- **Contact AUX (Auxiliary) NC** normally closed

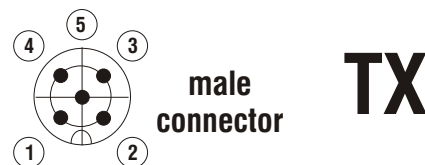
PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P080	320	445	395	14	3x3
LC3 - P080	480	605	555	16	4x4
LC3 - P080	640	765	715	18	5x5
LC3 - P080	800	925	875	20	6x6
LC3 - P080	960	1085	1035	22	7x7
LC3 - P080	1120	1245	1195	24	8x8
LC3 - P080	1280	1405	1355	26	9x9
LC3 - P080	1440	1565	1515	28	10x10
LC3 - P080	1600	1725	1675	30	11x11
LC3 - P080	1760	1885	1835	32	12x12
LC3 - P080	1920	2045	1995	34	13x13

Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE



- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

VERSION MOUNTING SOLUTION "SMO" (STANDARD)

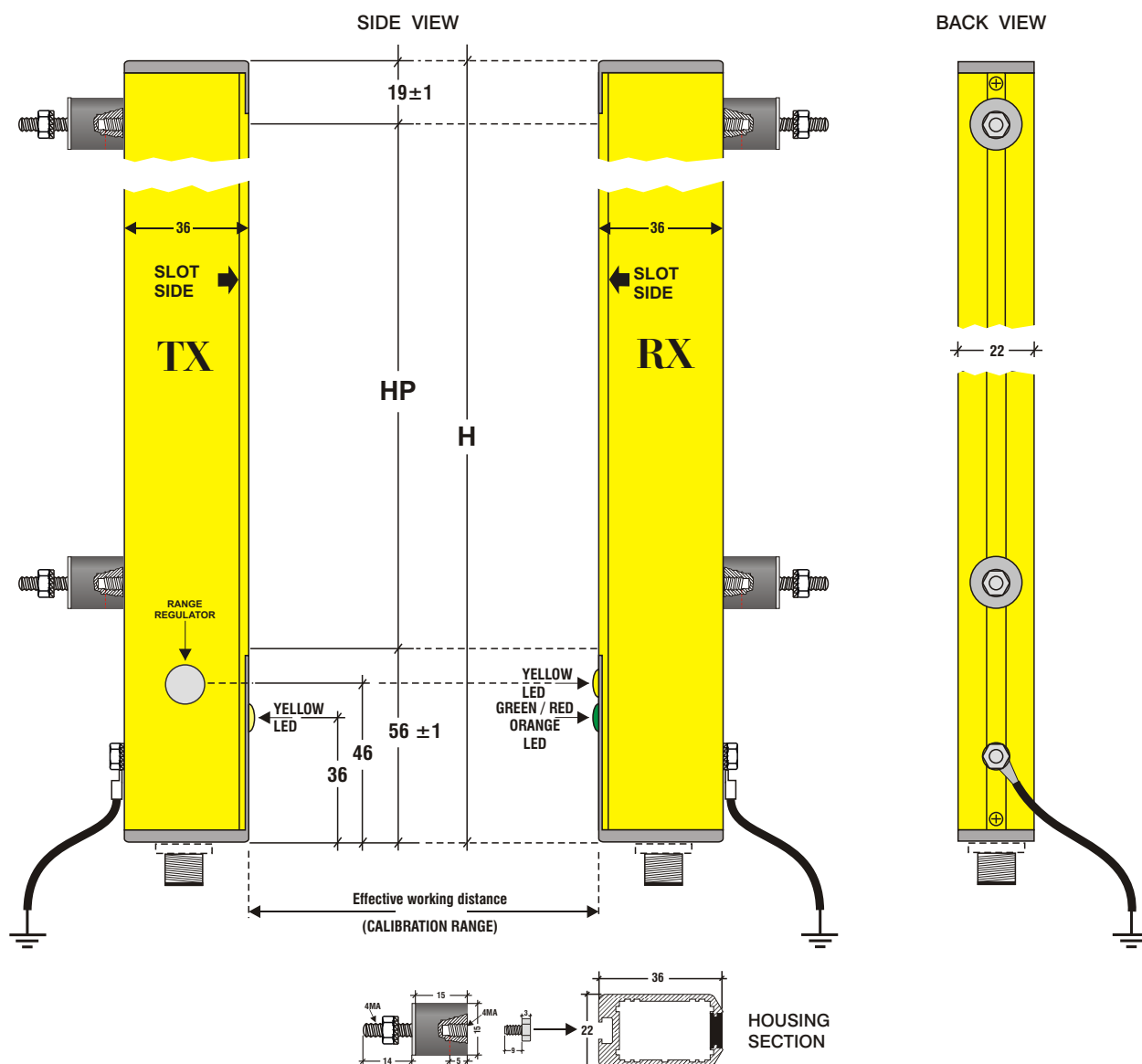


ANTIVIBRATING ELASTIC SUPPORTS

Fig.2

VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H, are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P080	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	<div>1</div> <div>2</div> <div>3</div> <div>4</div>	<div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> <div>12</div> <div>13</div> <div>14</div>

Example

LC3 - P080 - 320 - 1000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---



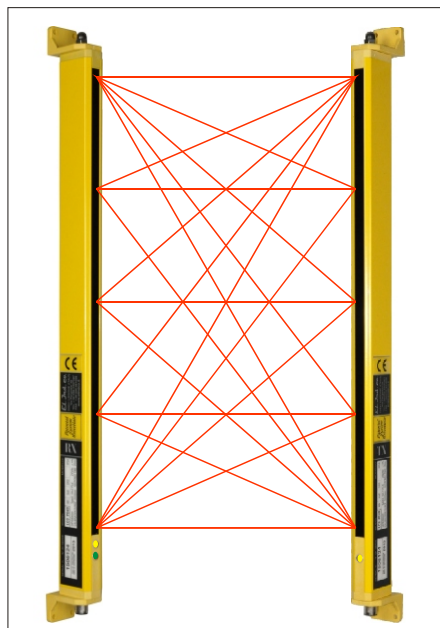
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LC3 - P120

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 120 mm - body

Protected Height 240 ÷ 1920 mm

Range HP ÷ 30 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3 (*) self resetting with :

- **EDM** function = External Device Monitoring

- **TEST INPUT**

- **SRS** = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to **TYPE 4** through a control unit BOX2/4 which implements the following functions :

- **Outputs** 2 switches 5A/250V (safety relays)

- **Led Diagnostic** for failures signalling

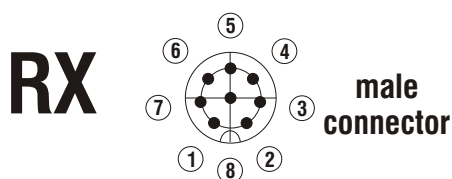
- **EDM** (External Device Monitoring)

- **Contact AUX (Auxiliary) NC** normally closed

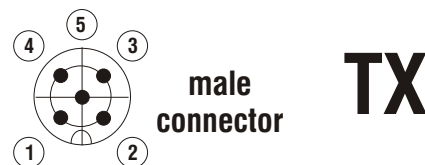
PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P120	240	365	315	12	2x2
LC3 - P120	480	605	555	14	3x3
LC3 - P120	720	845	795	16	4x4
LC3 - P120	960	1085	1035	18	5x5
LC3 - P120	1200	1325	1275	20	6x6
LC3 - P120	1440	1565	1515	22	7x7
LC3 - P120	1680	1805	1755	24	8x8
LC3 - P120	1920	2045	1995	26	9x9

Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE

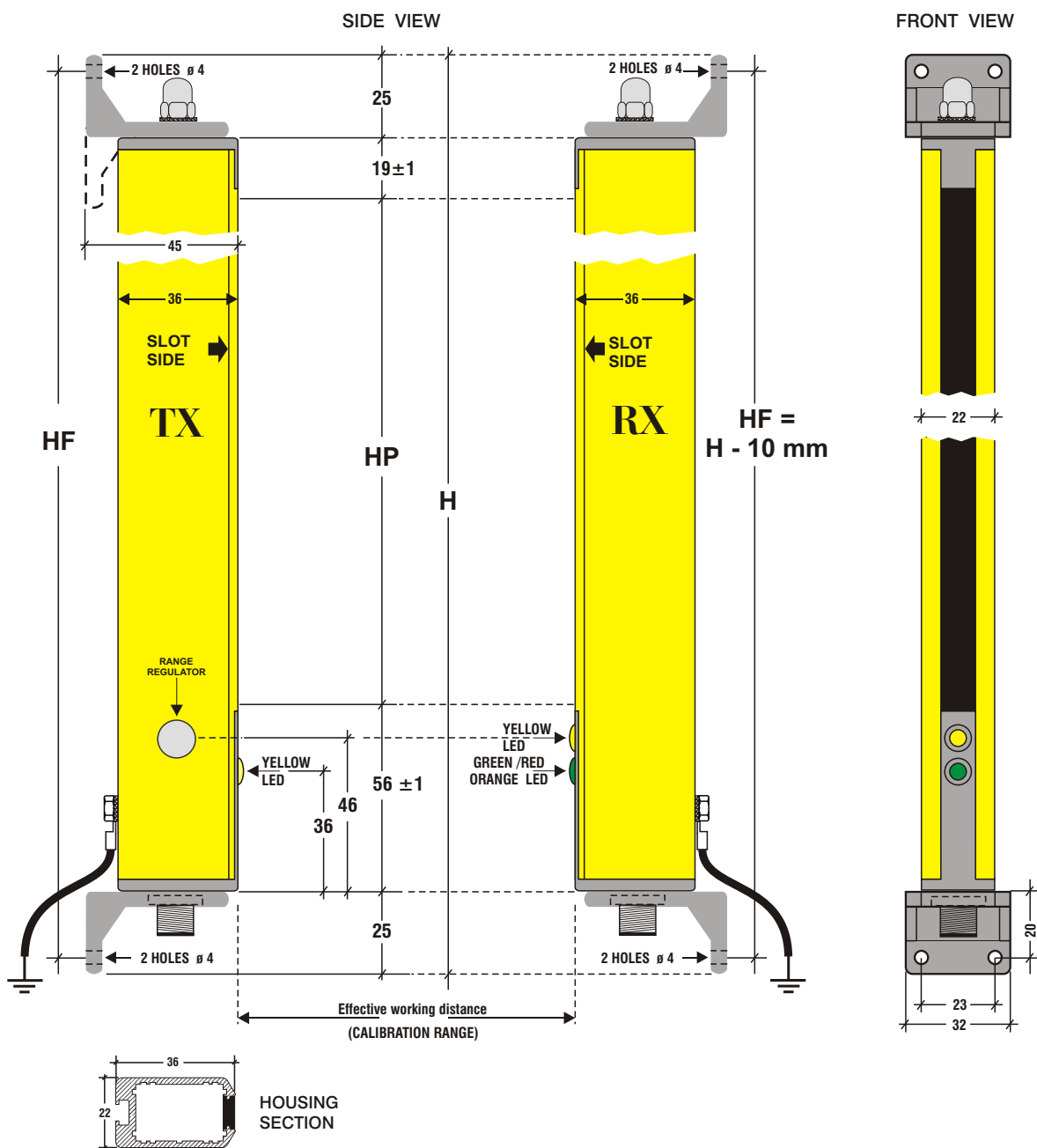


- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

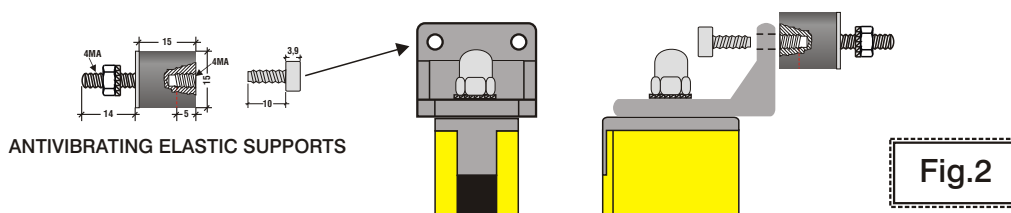
Fig.1

VERSION MOUNTING SOLUTION "SMO" (STANDARD)



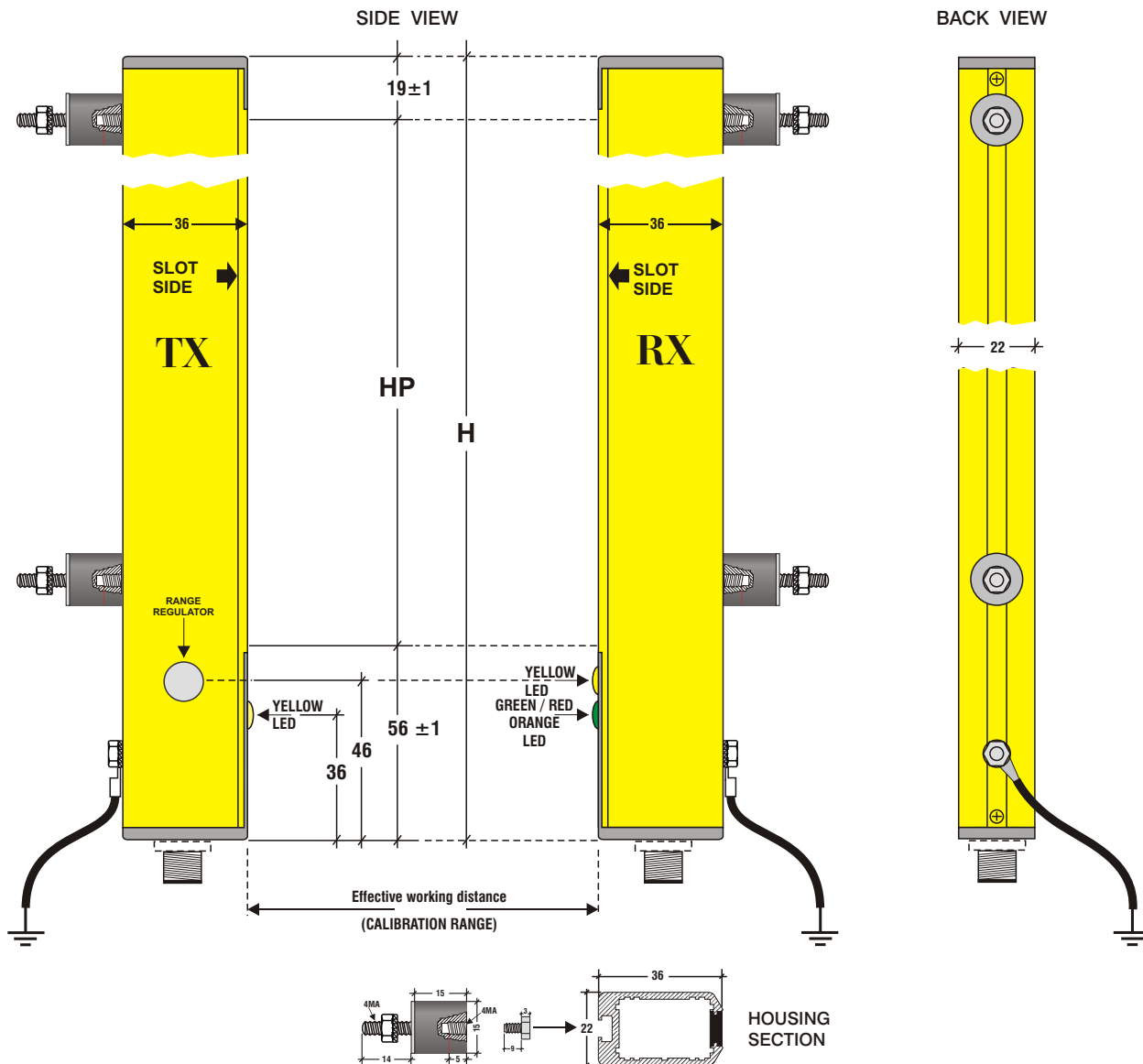
KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H , are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P120	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	<div>1</div> <div>2</div> <div>3</div> <div>4</div>	<div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> <div>12</div> <div>13</div> <div>14</div>

Example

LC3 - P120 - 480 - 1000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---



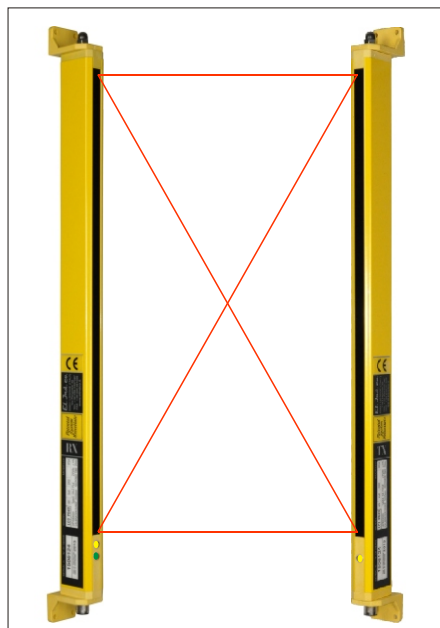
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LC3 - P150

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 150 mm - access

Protected Height 300 ÷ 1500 mm

Range HP ÷ 30 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3 (*) self resetting with :

- **EDM** function = External Device Monitoring

- **TEST INPUT**

- **SRS** = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to **TYPE 4** through a control unit BOX2/4 which implements the following functions :

- **Outputs** 2 switches 5A/250V (safety relays)

- **Led Diagnostic** for failures signalling

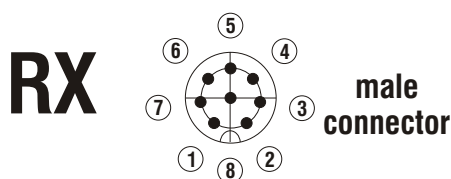
- **EDM** (External Device Monitoring)

- **Contact AUX (Auxiliary) NC** normally closed

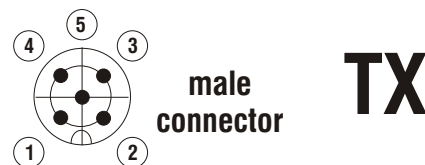
PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P150	300	425	375	12	2x2
LC3 - P150	600	725	675	14	3x3
LC3 - P150	900	1025	975	16	4x4
LC3 - P150	1200	1325	1275	18	5x5
LC3 - P150	1500	1625	1575	20	6x6

Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE

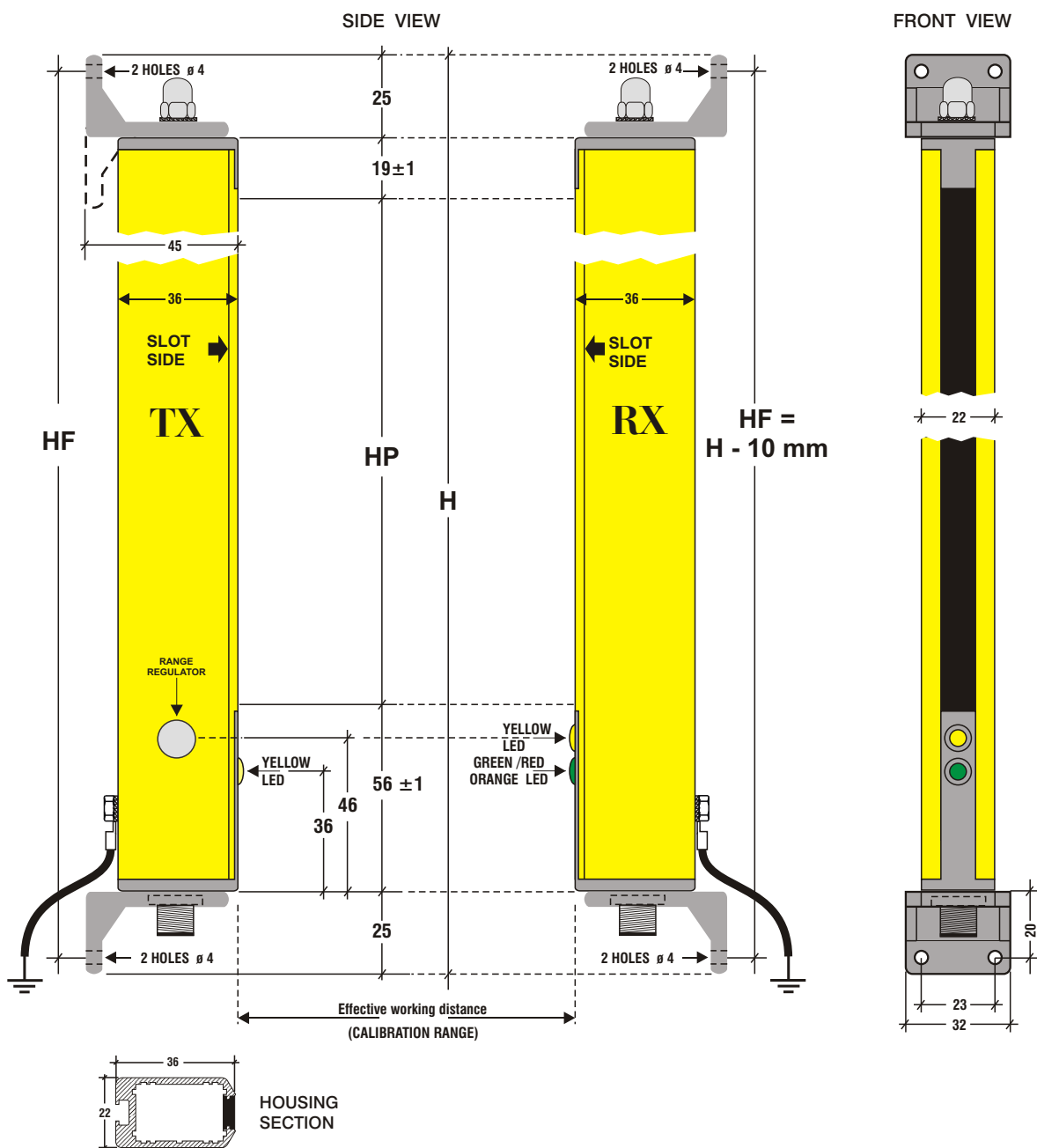


- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

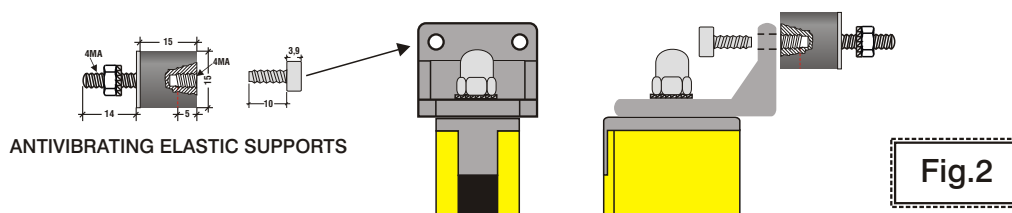
Fig.1

VERSION MOUNTING SOLUTION "SMO" (STANDARD)



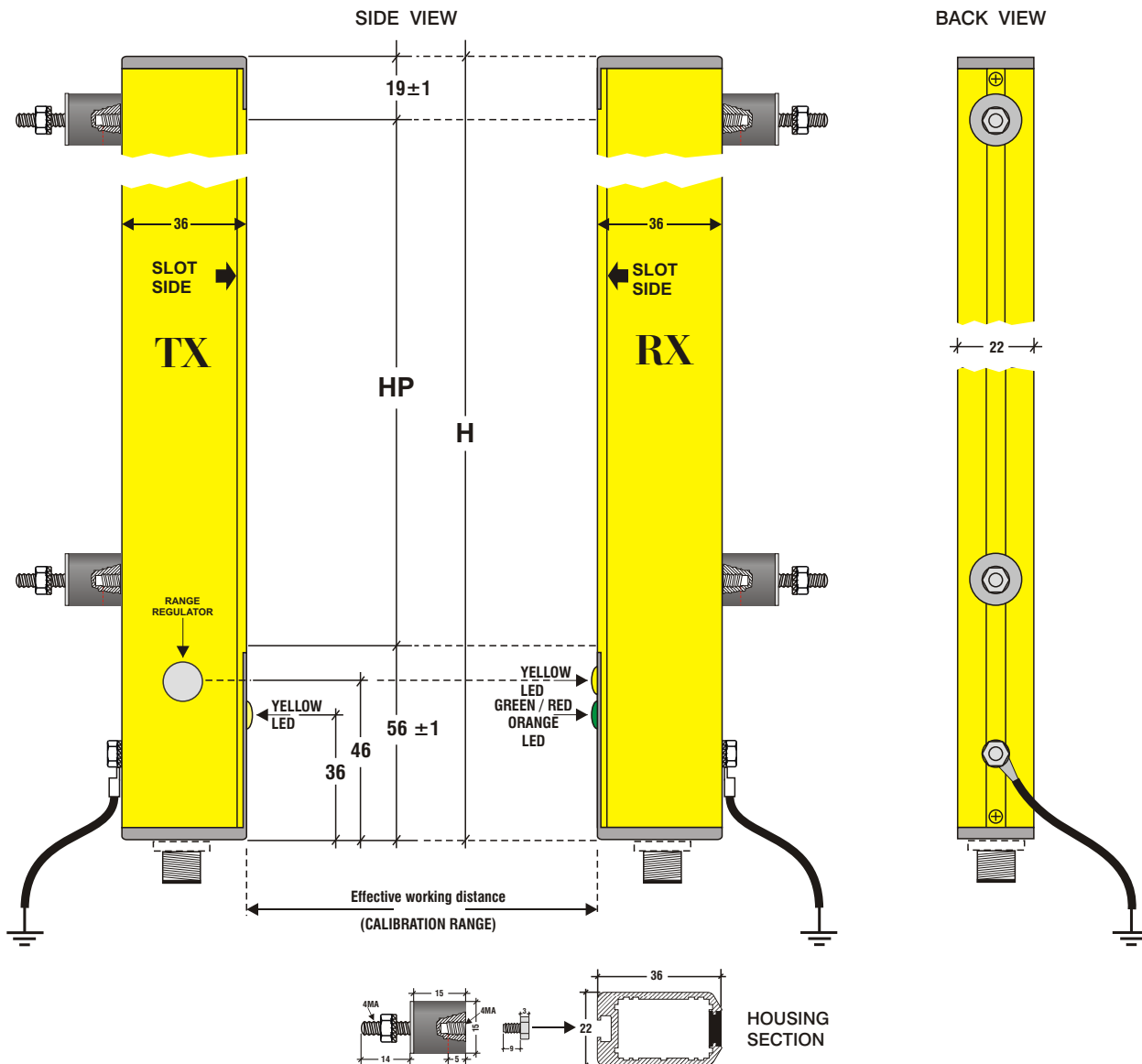
KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H, are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P150	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	1 2 3 4	5 9 13 6 10 14 7 11 8 12

Example

LC3 - P150 - 600 - 2000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---



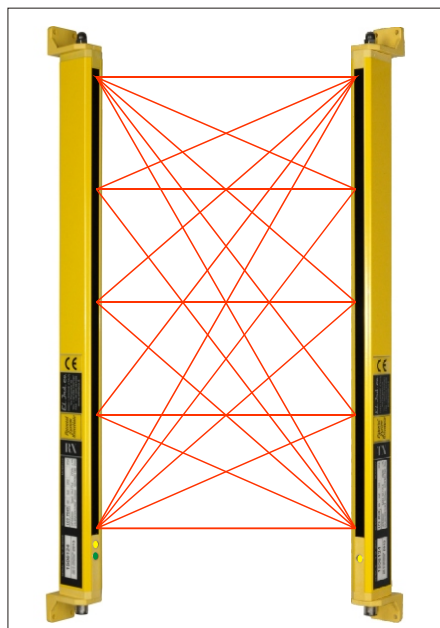
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LC3 - P160

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 160 mm - body

Protected Height 320 ÷ 1920 mm

Range HP ÷ 30 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3 (*) self resetting with :

- **EDM** function = External Device Monitoring

- **TEST INPUT**

- **SRS** = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to **TYPE 4** through a control unit BOX2/4 which implements the following functions :

- **Outputs** 2 switches 5A/250V (safety relays)

- **EDM** (External Device Monitoring)

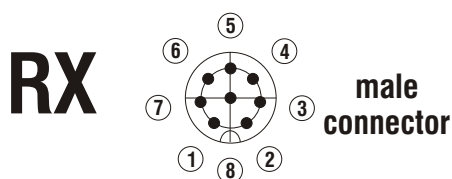
- **Led Diagnostic** for failures signalling

- **Contact AUX (Auxiliary) NC** normally closed

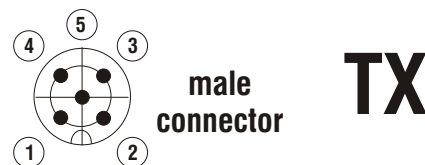
PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P160	320	445	395	12	2x2
LC3 - P160	640	765	715	14	3x3
LC3 - P160	960	1085	1035	16	4x4
LC3 - P160	1280	1405	1355	18	5x5
LC3 - P160	1600	1725	1675	20	6x6
LC3 - P160	1920	2045	1995	22	7x7

Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE

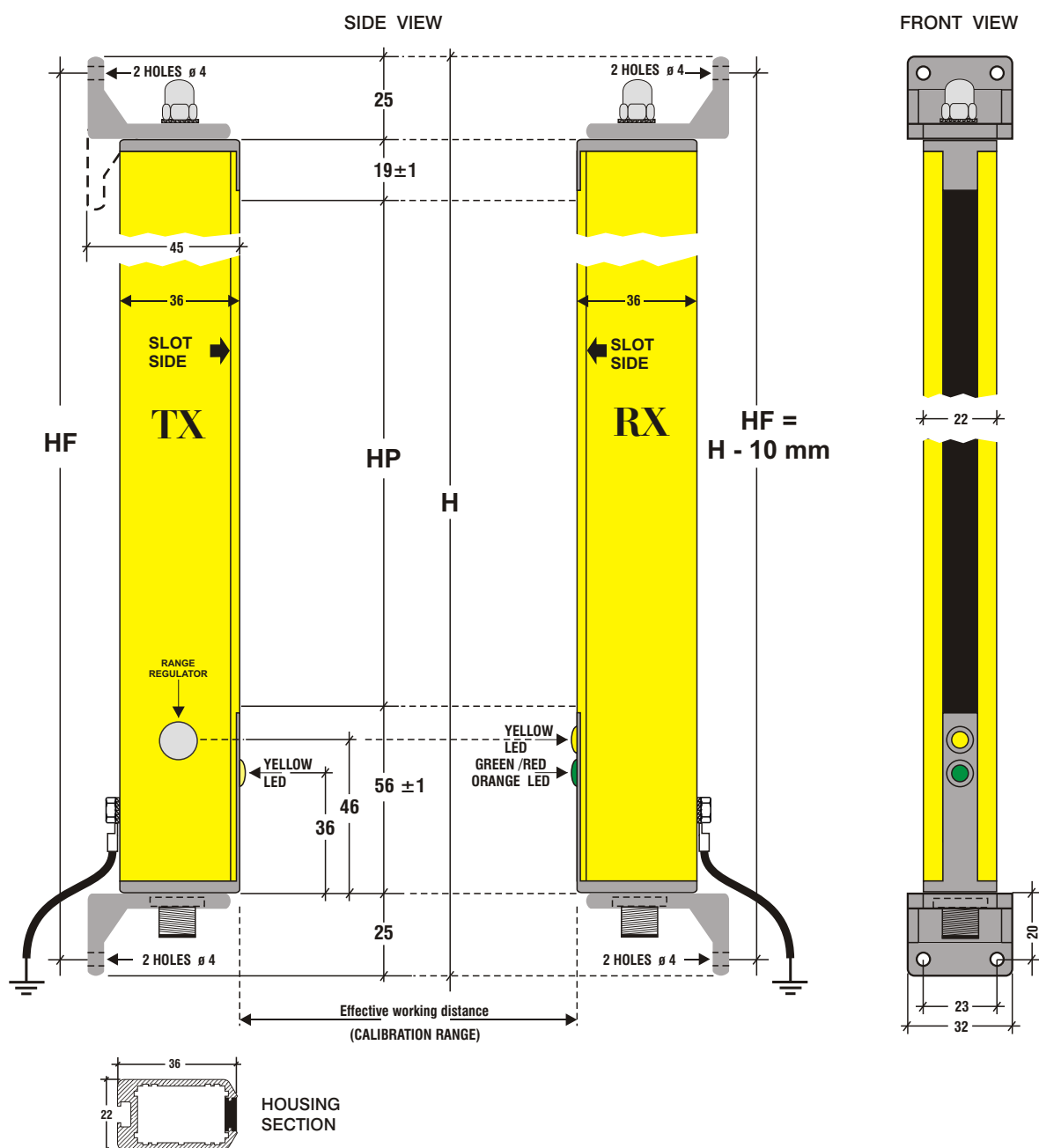


- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

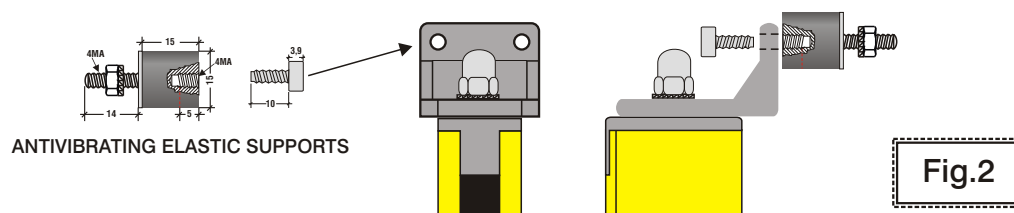
Fig.1

VERSION MOUNTING SOLUTION "SMO" (STANDARD)



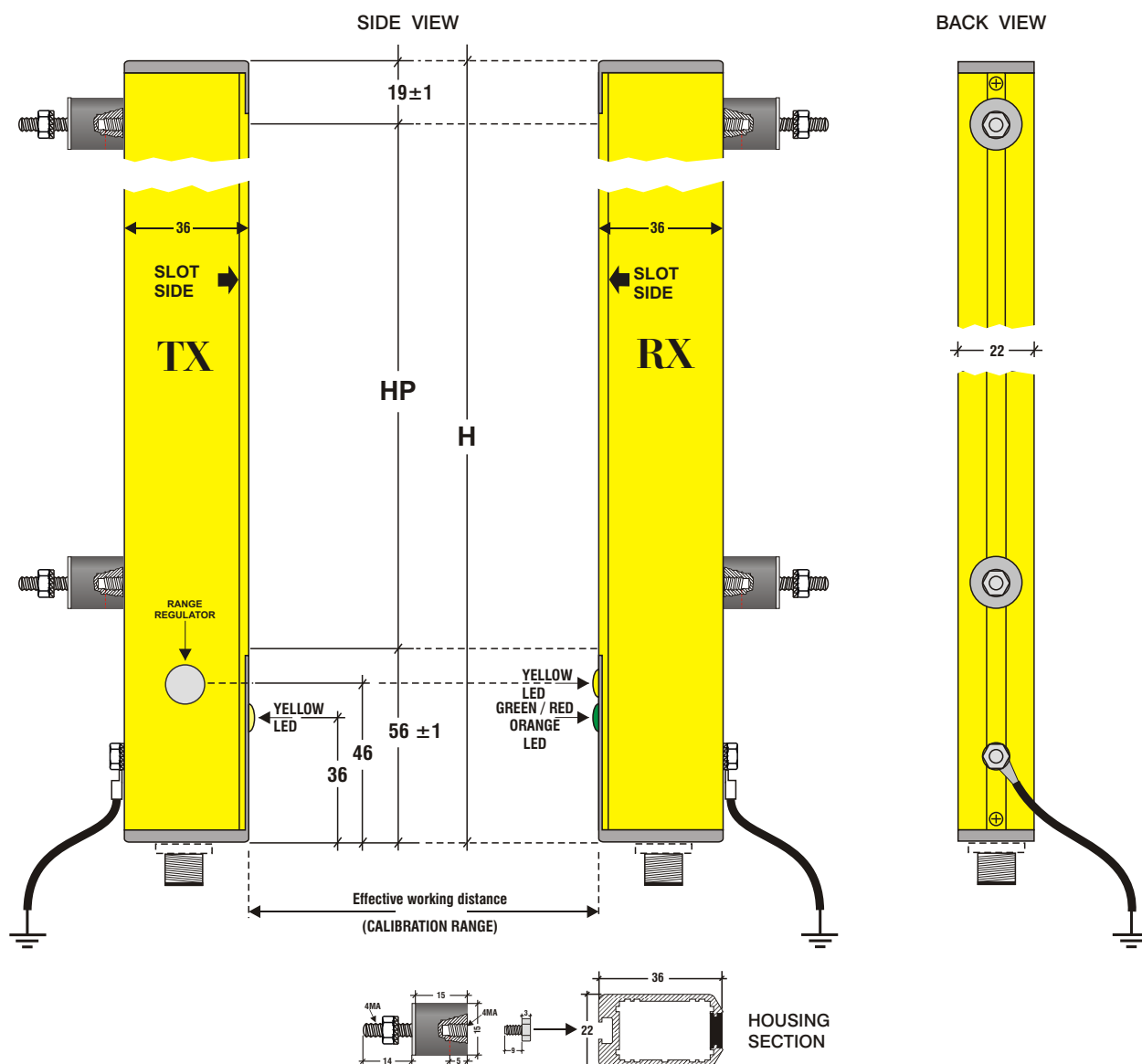
KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H , are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P160	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	1 2 3 4	5 9 13 6 10 14 7 11 8 12

Example

LC3 - P160 - 1600 - 1000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---



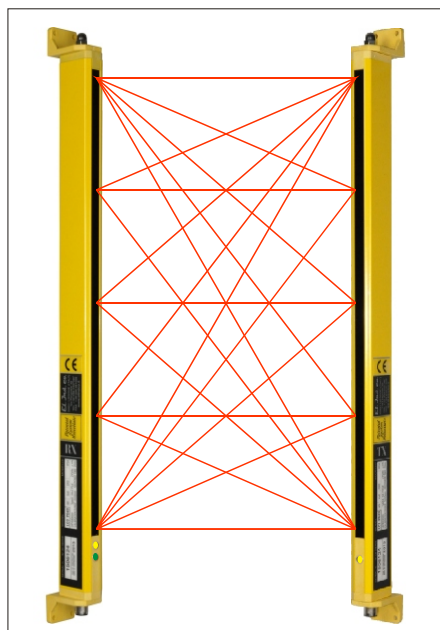
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LC3 - P200

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 200 mm - body

Protected Height 400 ÷ 2000 mm

Range HP ÷ 30 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3 (*) self resetting with :

- **EDM** function = External Device Monitoring

- **TEST INPUT**

- **SRS** = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to **TYPE 4** through a control unit BOX2/4 which implements the following functions :

- **Outputs** 2 switches 5A/250V (safety relays)

- **Led Diagnostic** for failures signalling

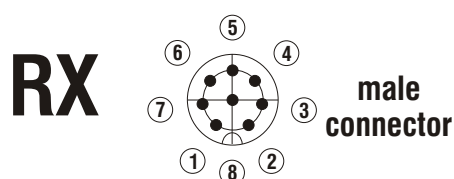
- **EDM** (External Device Monitoring)

- **Contact AUX (Auxiliary) NC** normally closed

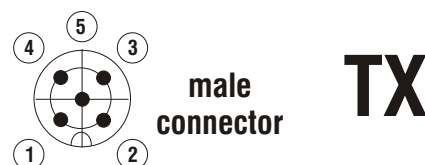
PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P200	400	525	475	12	2x2
LC3 - P200	800	925	875	14	3x3
LC3 - P200	1200	1325	1275	16	4x4
LC3 - P200	1600	1725	1675	18	5x5
LC3 - P200	2000	2125	2075	20	6x6

Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE

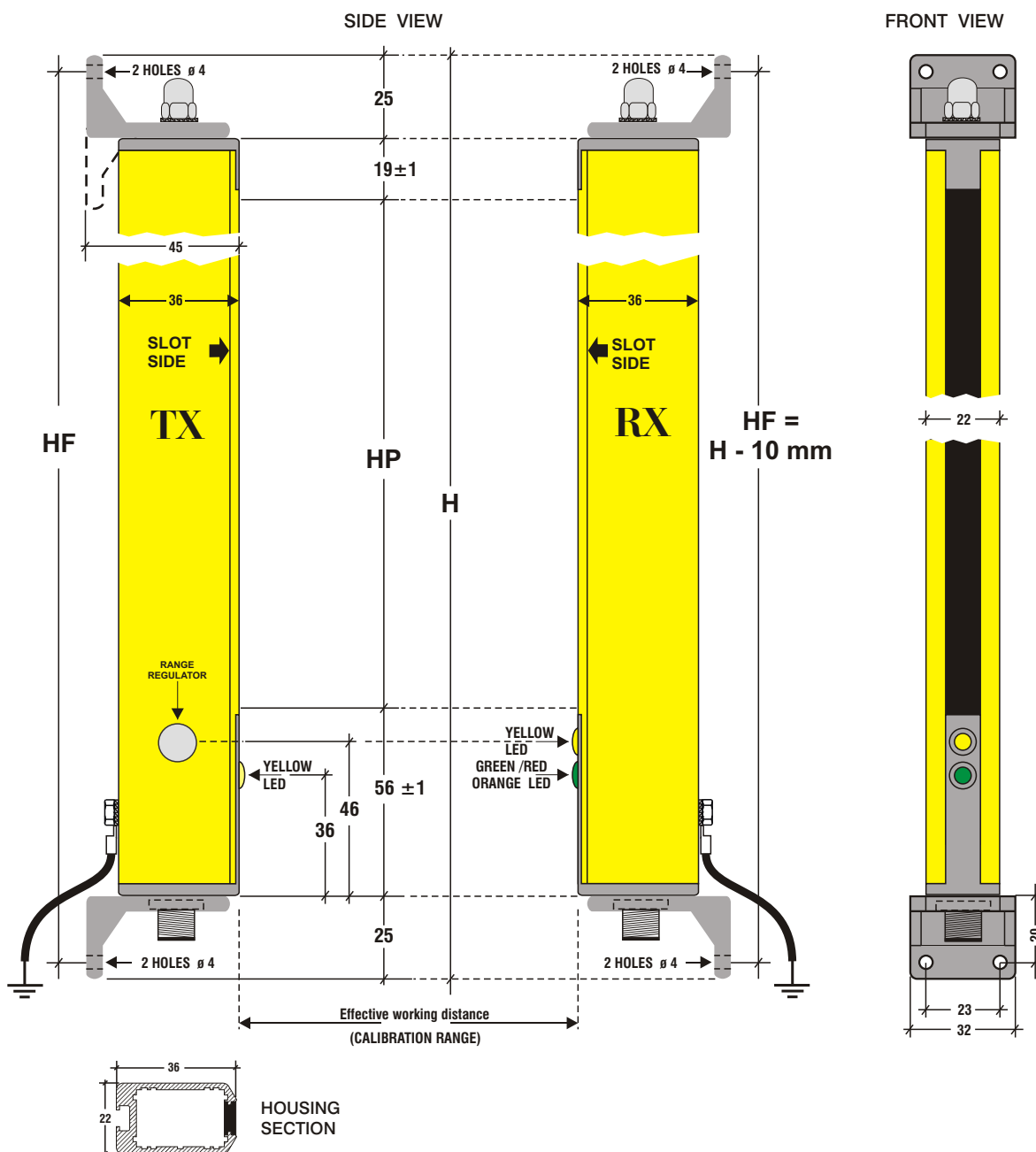


- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

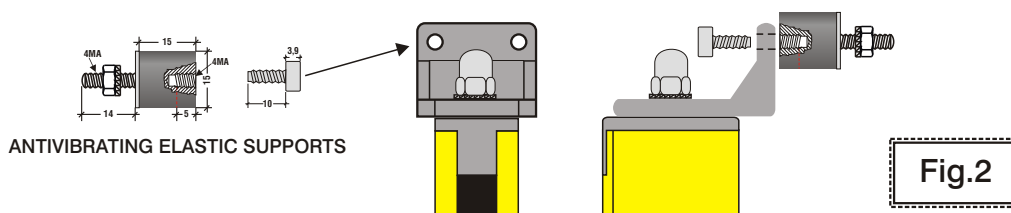
Fig.1

VERSION MOUNTING SOLUTION "SMO" (STANDARD)



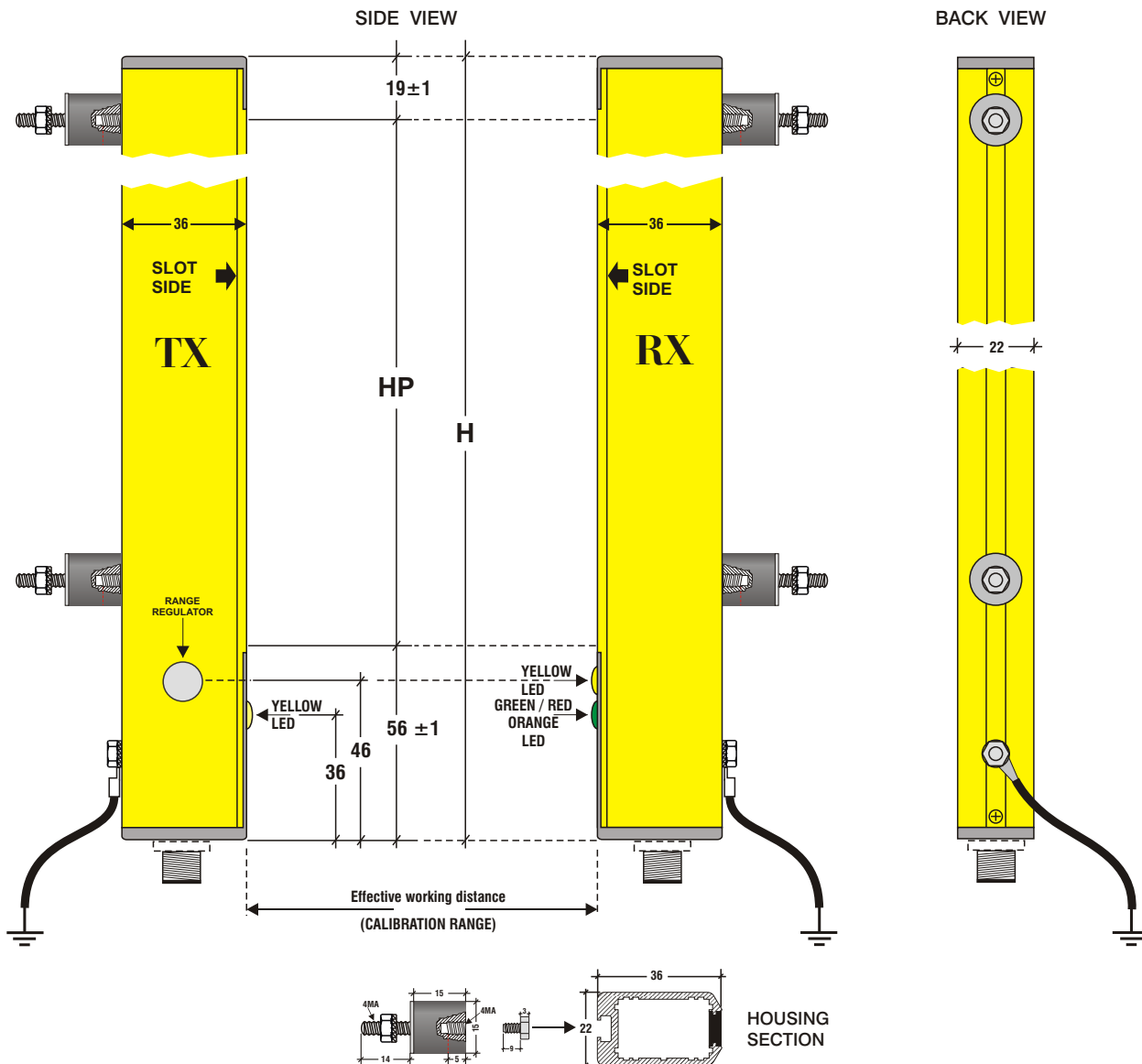
KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H , are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P200	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	1 2 3 4	5 9 13 6 10 14 7 11 8 12

Example

LC3 - P200 - 2000 - 3000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---



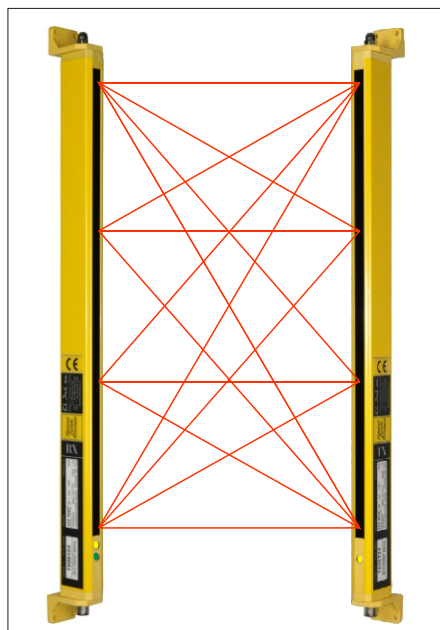
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LC3 - P240

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 240 mm - body

Protected Height 480 ÷ 1920 mm

Range HP ÷ 30 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3 (*) self resetting with :

- **EDM** function = External Device Monitoring

- **TEST INPUT**

- **SRS** = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to **TYPE 4** through a control unit BOX2/4 which implements the following functions :

- **Outputs** 2 switches 5A/250V (safety relays)

- **Led Diagnostic** for failures signalling

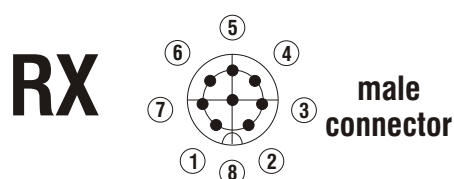
- **EDM** (External Device Monitoring)

- **Contact AUX (Auxiliary) NC** normally closed

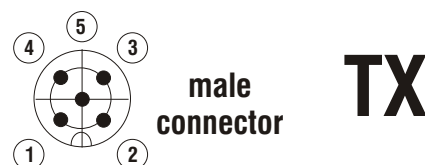
PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P240	480	605	555	12	2x2
LC3 - P240	960	1085	1035	14	3x3
LC3 - P240	1440	1565	1515	16	4x4
LC3 - P240	1920	2045	1995	18	5x5

Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE



- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

VERSION MOUNTING SOLUTION "SMO" (STANDARD)

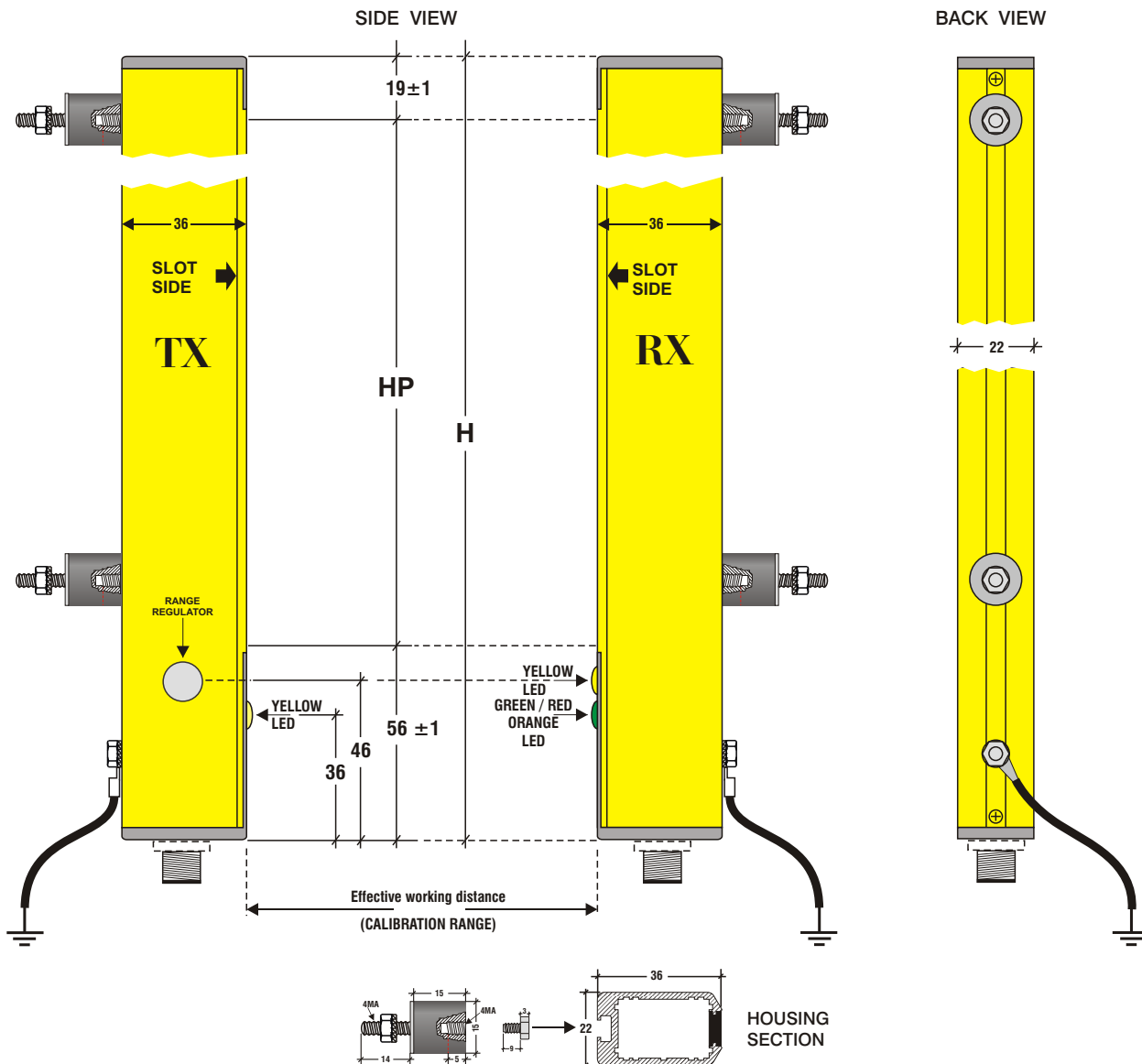


ANTIVIBRATING ELASTIC SUPPORTS

Fig.2

VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H, are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P240	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	1 2 3 4	5 9 13 6 10 14 7 11 8 12

Example

LC3 - P240 - 1920 - 1000 - NR +

1	2	-	-
---	---	---	---

 +

5	6	7	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---



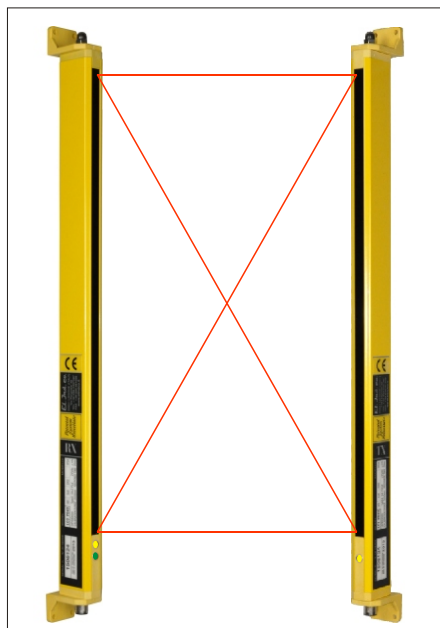
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LC3 - P280

Safety Light Curtain TYPE 3 - SIL 2 SILCL 2 PL d
Safety Light Curtain TYPE 4* - SIL 3* SILCL 3 PL e



Resolution 280 mm - access

Protected Height 560 ÷ 1680 mm

Range HP ÷ 30 meters

Output 2 switches - ON/OFF

Directives 2006/42/EC - 2014/30/EC - 2014/35/EC

Standards CEI-EN 61496-1:2014 - CEI-EN 61496-2:2014

Certificate N.0068/ETI - MAC/029-2015

Light curtain Type 3 (*) self resetting with :

- **EDM** function = External Device Monitoring

- **TEST INPUT**

- **SRS** = manual start restart after an intervention and switch on the device by choosing the option SRS

The light curtain is supplied in series with a connector output M12 and with orientable support brackets (SMO)

(*) Upgrading to **TYPE 4** through a control unit BOX2/4 which implements the following functions :

- **Outputs** 2 switches 5A/250V (safety relays)

- **Led Diagnostic** for failures signalling

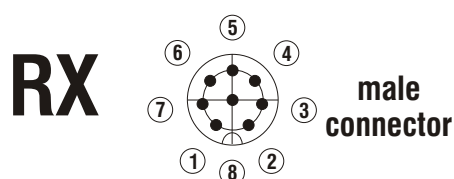
- **EDM** (External Device Monitoring)

- **Contact AUX (Auxiliary) NC** normally closed

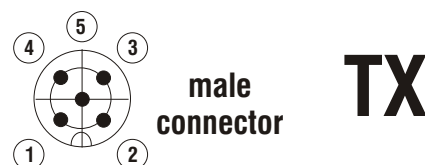
PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
LC3 - P280	560	685	635	12	2x2
LC3 - P280	1120	1245	1195	14	3x3
LC3 - P280	1680	1805	1755	16	4x4

Safety Category	TYPE 3 - SIL 2 SILCL2 PL d / TYPE 4* - SIL 3* SILCL3 PL e
Power Supply	24Vdc \pm 10%
Absorption TX unit	80 mA max
Absorption RX unit	70 mA max
Output	2 switches SW1 - SW2 (ON/OFF) free from potential 0,3 Acc @ 24Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit BICOLOR LED { Green = Active Protection Red = Alarm - Yellow Led = Manual Operation Note : for more insight into the light signals see Chapter INSTALLATION - WIRING - DIAGNOSTICS of INSTRUCTION MANUAL
Housing	Polished aluminium RAL1021
Housing Section	22 x 36 mm
Protection Degree	IP54 (opzional IP67 - IP69K)
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
RX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
TX Connection	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

PIN OUT CONNECTOR M12


- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = |
| 4) Yellow | = |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE

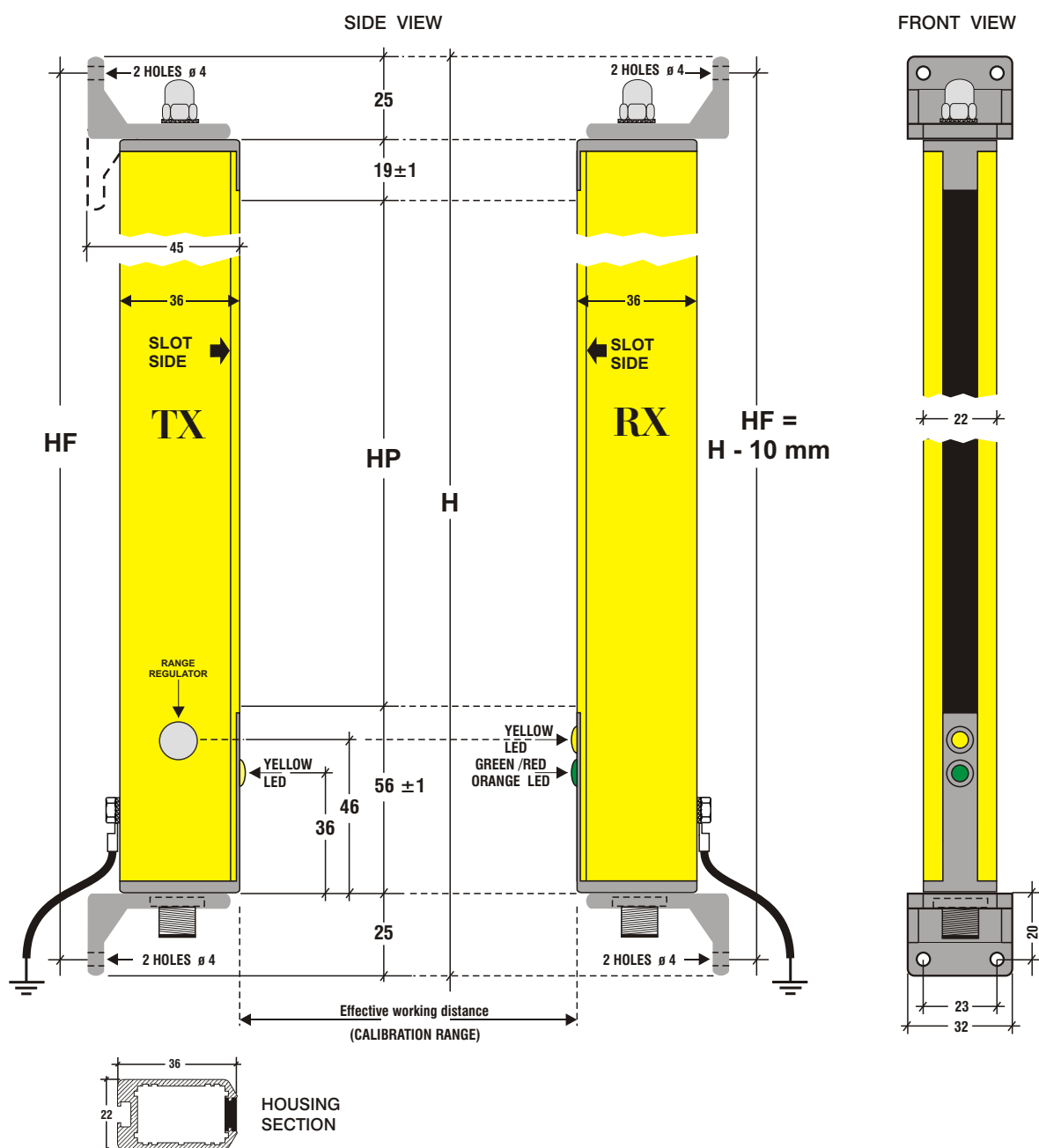


- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

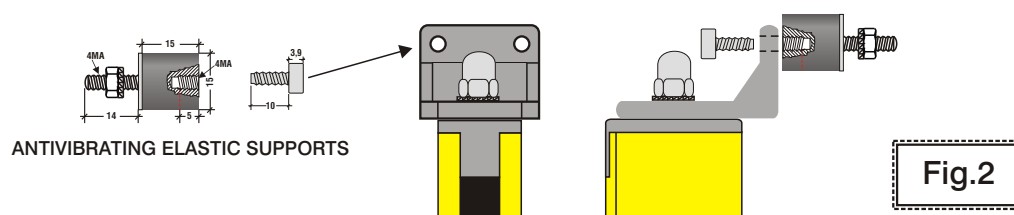
Fig.1

VERSION MOUNTING SOLUTION "SMO" (STANDARD)



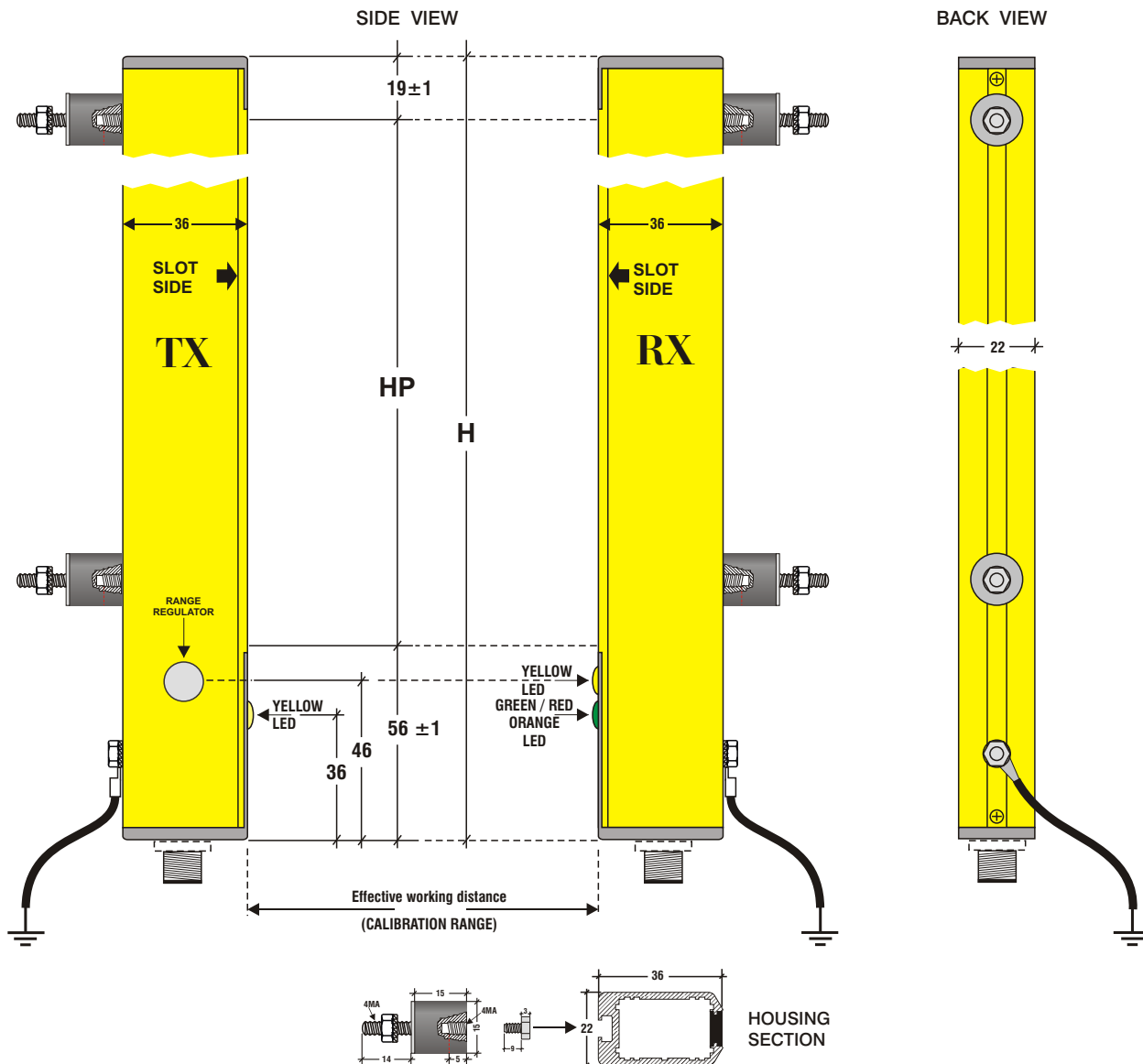
KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H, are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SRS	Manual Restart
SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

COD 5	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 5 poles (non included in the supply)
COD 8	Fully shielded cable PUR/PP - lenght 10 meters pre-wires with connector female straight M12 8 poles (non included in the supply)
BOX 2/4 (*)	External control unit for TYPE 4 upgrading
BOX - MUT	External control unit for neutralization MUTING
SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
BTO	Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
COLV	Triangular column to allocate the light curtain for construction enclosures
COLV + BTO	Triangular column to V + Orientable Ground Base in INOX 135x150mm to use with SPV100 - SPV100 PLUS
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SRS	1	COD 5	5
SEA	2	COD 8	6
CB60 IP67	3	BOX 2/4	7
CB60 IP69K	4	BOX MUT	8
		SPV100	9
		SPV100 PLUS	10
		BTO	11
		COLV	12
		COLV + BTO	13
		KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
LC3-P280	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	<div>1</div> <div>2</div> <div>3</div> <div>4</div>	<div>5</div> <div>6</div> <div>7</div> <div>8</div> <div>9</div> <div>10</div> <div>11</div> <div>12</div> <div>13</div> <div>14</div>

Example

LC3 - P280 - 560 - 1000 - NR +

1	2	-	-
---	---	---	---

 +

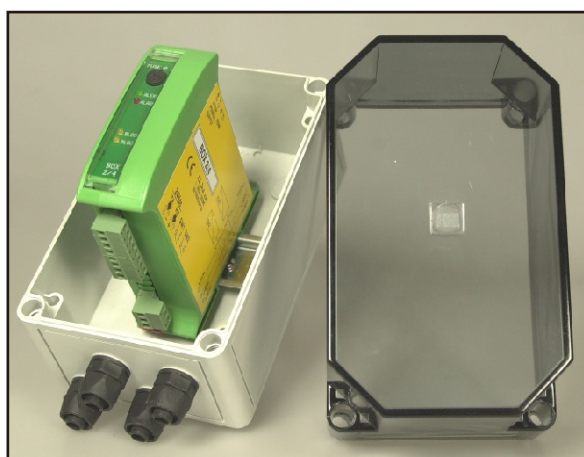
5	6	7	-	-	-	-	-	-	-
---	---	---	---	---	---	---	---	---	---



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BOX 2/4**BOX 2/4 IP66****Control Unit for SAFETY UPGRADING
TYPE 4 - SIL 3 SILCL 3 PL e**

BOX 2/4 and **BOX 2/4 IP66** control unit together with the Safety Light Curtains TYPE 3 (model LC3) upgrades the category to TYPE 4.

The control unit receives at its inputs the light curtain final switches, which controls their disparity and supplies in its output the two closed contacts in state of alert, coming from the two safety relays at guided contacts in redundancy selfcontrolled

Moreover the control unit provides these functions :

- **External Device Monitoring (EDM)** : control of the external devices : for example contactor, relay, etc...
- **Led Diagnostic** for failures signalling and detection
- **Contact AUX (Auxiliary)** closed with light curtain in alarm state

TECHNICAL FEATURES

Power Supply	24Vdc \pm 10%
Absorption	60 mA
Type 3 Inputs	2 NO (switches SW1 - SW2) contacts with light curtain in alarm state
Type 4 Outputs	2 NO (switches SW3 - SW4) contacts with light curtain in alarm state
Outputs Current	5A @ 250Vac
Outputs Protection	fuses 5A
Contact AUX	1 NC - 3 A max (no safety)
Response Time	15 milliseconds
Housing	BOX 2/4 = Blend PC/ABS self-autoextinguishing DIN RAIL (EN60715) BOX 2/4 IP66 = Polycarbonate reinforced with glass fiber - transparent lid (EN60529)
Mechanical Dimensions	BOX 2/4 = 101 x 119 x 35 mm / BOX 2/4 IP66 = 110 x 180 x 165 mm
Protection Degree	BOX 2/4 = IP20 / BOX 2/4 IP66 = IP66
Working Temperature	0 / +55 °C
PFHd	10^{-8} until to $< 10^{-7}$
Directives	2006/42/EC - 2014/30/EC - 2014/35/EC
Standards	CEI-EN 61496-1: 2014 - CEI-EN 61496-2 : 2014



















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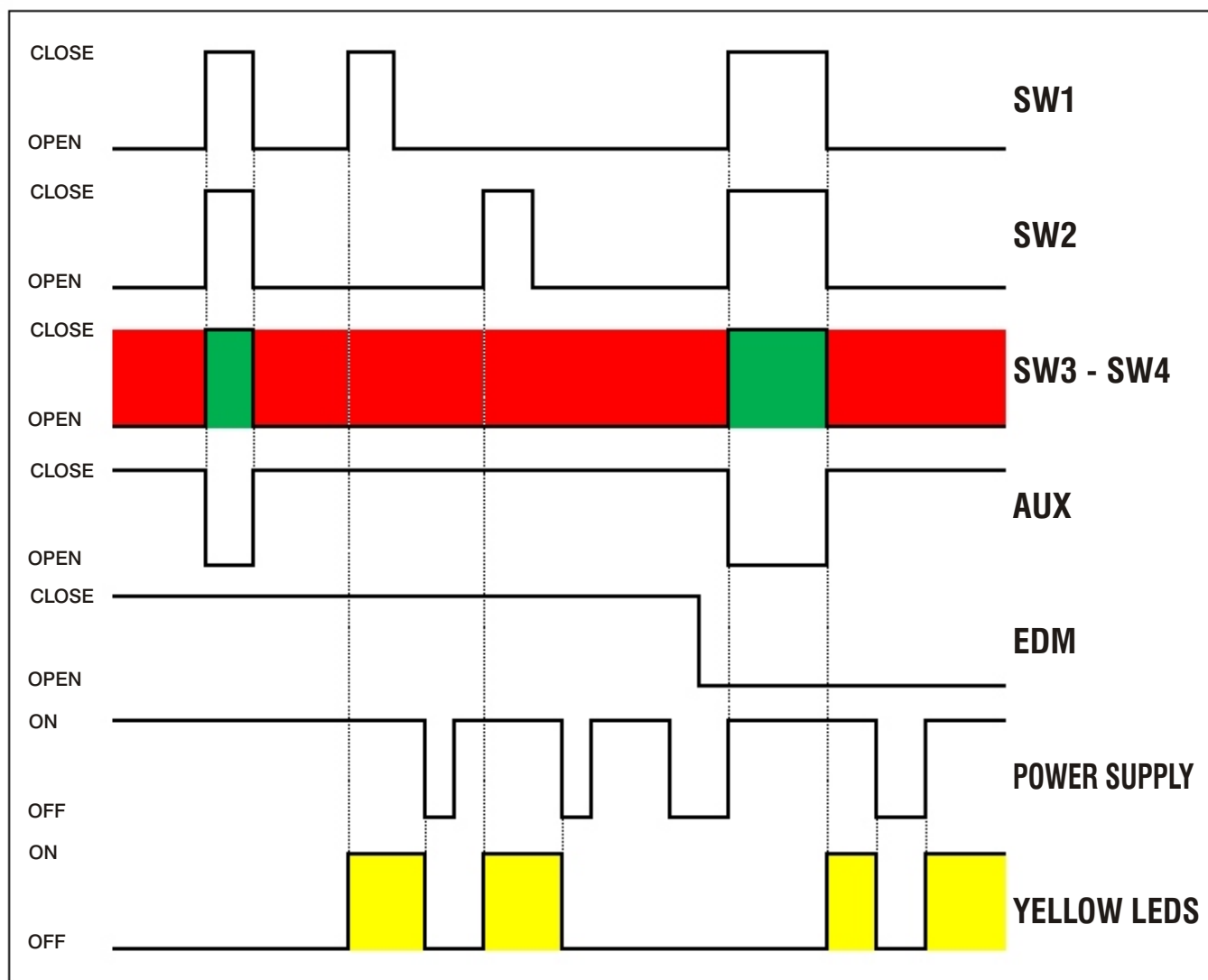
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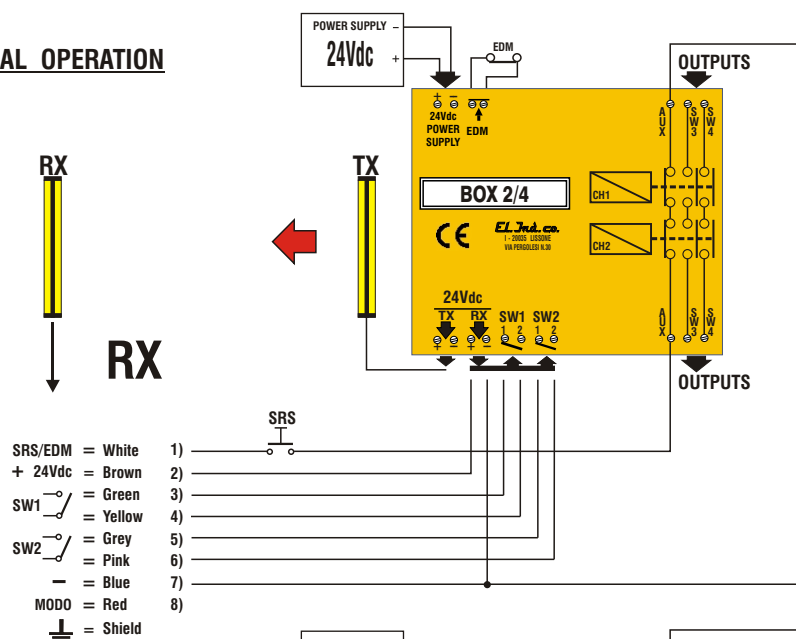
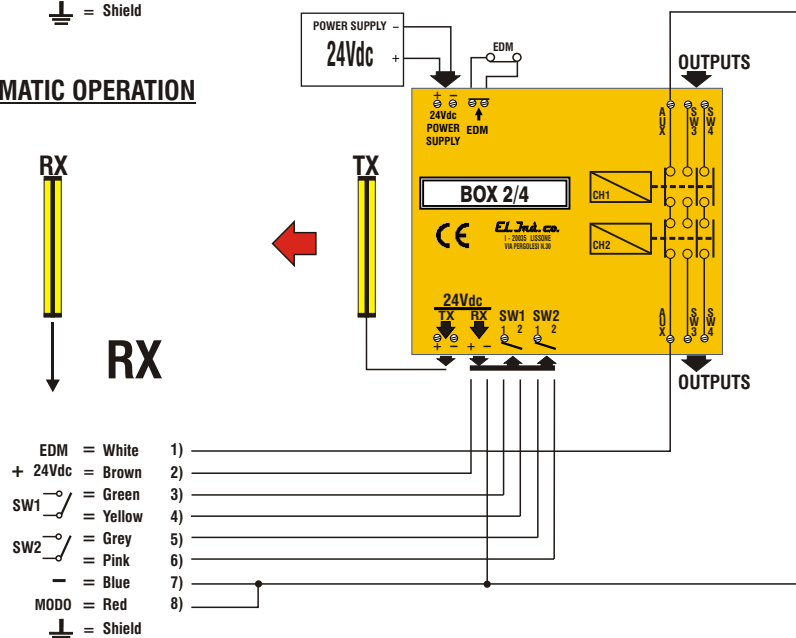
page 1/3

FUSE 0,5 A  ALERT  ALARM  BLOCK  BLOCK BOX 2/4	LEDs STATUS	SITUATION	SOLUTION
	 ALERT = OFF  ALARM = ON  BLOCK = OFF  BLOCK = OFF	Light curtain in alarm state or disconnected	No abnormality
	 ALERT = ON  ALARM = OFF  BLOCK = OFF  BLOCK = OFF	Light curtain in alert state	
	 ALERT = OFF  ALARM = ON  BLOCK = ON  BLOCK = ON	Disparity of the input signals, check the outputs of the light curtain. They must open / close at the same time	Resolve the anomaly and then remove the power supply for at least 2 seconds

Any other state is considered an internal error. Call Service EL.IND.CO.

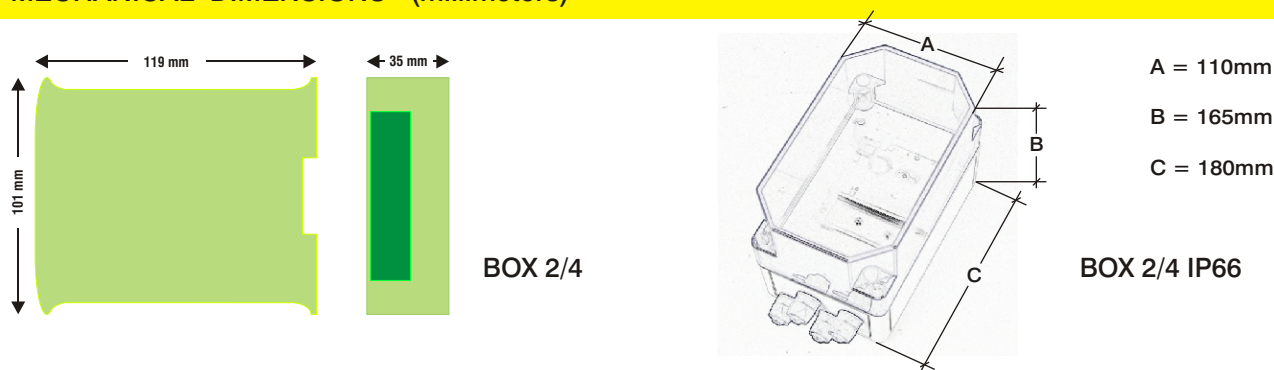
STATE DIAGRAM



MANUAL OPERATION**AUTOMATIC OPERATION**

N.B. The unit "BOX 2/4" is provided with the function EDM temporarily excluded (jumper on terminal EDM).

When you had to use other external devices (relays, etc ...) to increase the output contacts, you may want to control the safety of these devices eliminate the bridge in the EDM terminal and connect the contact / contacts NC of such devices in series in the clamp EDM.

MECHANICAL DIMENSIONS (millimeters)**HOW TO ORDER**

Product Code

BOX 2/4

BOX 2/4 IP66



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BOX-MUT**BOX-MUT IP66**

**MUTING CONTROL UNIT for
TYPE 3 - SIL2 SILCL2 PLd LIGHT CURTAIN**



Temporary MUTING of the Safety TYPE3 Light Curtain in relation to the machine cycle.
The MUTING function is necessary for the normal automatic cycle of a plant when the object must cross the lightguard without provoking the machine stop.

The palletizer is an example when the palletized product must pass free through the area controlled by the light curtain, while the access of a person must provoke an immediate stop of the plant.

Applications : palletizers - robot area - mounting areas - industrial automatic warehouses - etc ...

TECHNICAL FEATURES

Power Supply	24Vdc \pm 10%
Absorption	40 mA
Type 3 Inputs	2 NO (switches SW1 - SW2) contacts with light curtain in alarm state
Type 3 Outputs	2 NO (switches SW1 - SW2) contacts with light curtain in alarm state
Outputs Current	0,75 A @ 40Vdc
Outputs Protection	Short circuit or overcharge
Input Muting Sensors	2 contacts NO or NPN (see diagram electrical connection)
MUTING Time Adjust	4÷90 seconds or infinite through microswitches (MUTING MODE)
Housing	BOX-MUT = Blend PC/ABS self-autoextinguishing DIN RAIL (EN60715) BOX-MUT IP66 = Polycarbonate reinforced with glass fiber - transparent lid (EN60529)
Mechanical Dimensions	BOX-MUT = 101 x 119 x 35 mm / BOX-MUT IP66 = 110 x 180 x 165 mm
Working Temperature	0 / +55 °C
Protection Degree	BOX-MUT = IP20 / BOX-MUT IP66 = IP66
PFHd	10^{-8} until to $< 10^{-7}$
Directives	2006/42/EC - 2014/30/EC - 2014/35/EC
Standards	CEI-EN 61496-1 : 2014 - CEI-EN 61496-2 : 2014

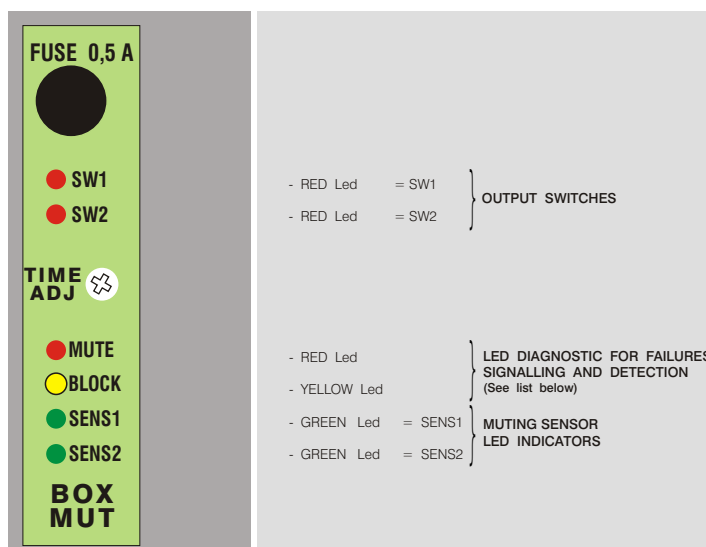


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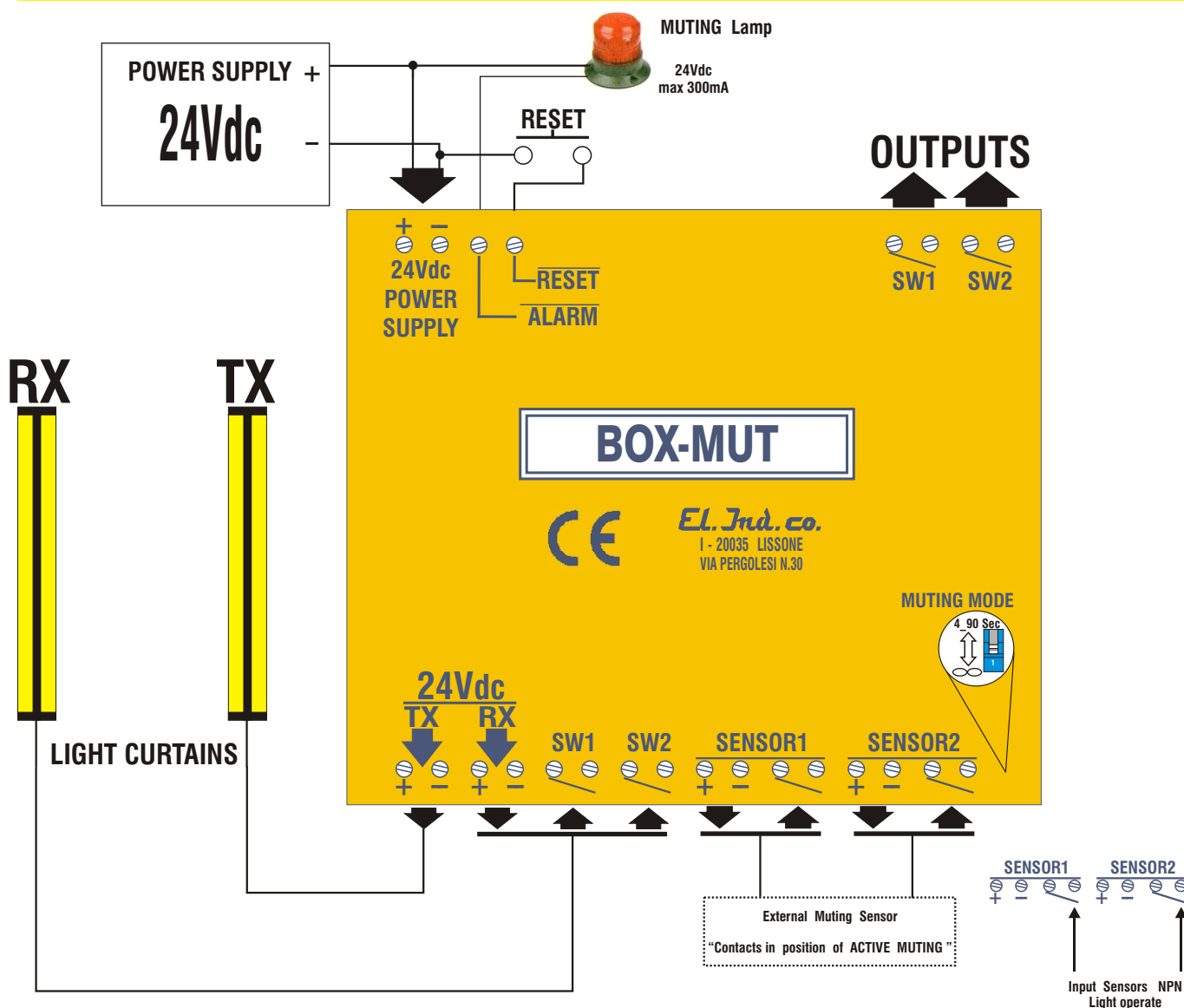
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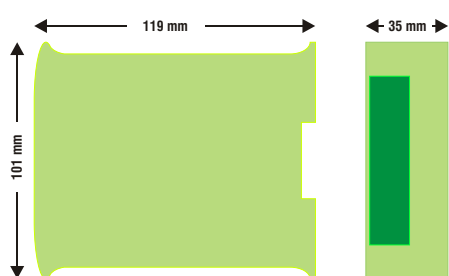
page 1/3



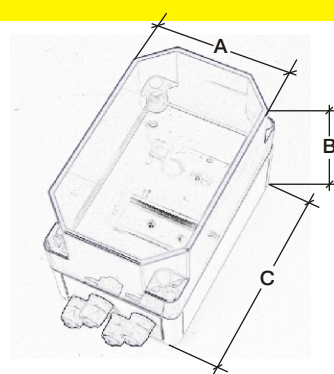
LEDs STATE	SITUATION	SOLUTION
<ul style="list-style-type: none"> ● SW1 = } Following the state of the light curtain ● SW2 = } ● MUTE = OFF ● BLOCK = OFF ● SENS1 = ON ● SENS2 = ON 	<p><u>NORMAL OPERATION</u></p> <p>No Muting request</p>	
<ul style="list-style-type: none"> ● SW1 = ON ● SW2 = ON ● MUTE = BLINKING ● BLOCK = OFF ● SENS1 = OFF ● SENS2 = OFF 	<p><u>MUTING - ON</u></p> <p>Corrects working of the machine and the Light Curtain in muting-mode. ALARM output in ON STATE (MUTING Lamp)</p>	
<ul style="list-style-type: none"> ● SW1 = } Following the state of the light curtain ● SW2 = } ● MUTE = ON ● BLOCK = ON ● SENS1 = ON OFF } State disparity sensors ● SENS2 = OFF ON } 	<p><u>BLOCK</u></p> <p>Disparity of Muting sensors "SENSOR1" "SENSOR2" more than 2 seconds</p>	<p>Eliminate the cause and then push the external button Reset</p>
<ul style="list-style-type: none"> ● SW1 = OFF ● SW2 = OFF ● MUTE = OFF ● BLOCK = ON ● SENS1 = OFF ● SENS2 = OFF 	<p><u>MUTING NOT ALLOWED</u></p> <p>Request of Muting when the light curtain is in the alarm state</p>	<p>Free the sensitive curtain of the light curtain and the Muting sensors from possible obstacle</p>
<ul style="list-style-type: none"> ● SW1 = } Following the state of the light curtain ● SW2 = } ● MUTE = } Simultaneous blinking ● BLOCK = } ● SENS1 = OFF ● SENS2 = OFF 	<p><u>TIME - OUT</u></p> <p>Muting time over-range set by the regulator TIME- ADJ (only MUTING MODE set on 4 ÷ 90 sec.)</p>	<p>Free the stand still obstacle among the Muting sources (photocells, switches, etc...)</p>



MECHANICAL DIMENSIONS (millimeters)



BOX-MUT



A = 110mm

B = 165mm

C = 180mm

BOX-MUT IP66

HOW TO ORDER

Product Code

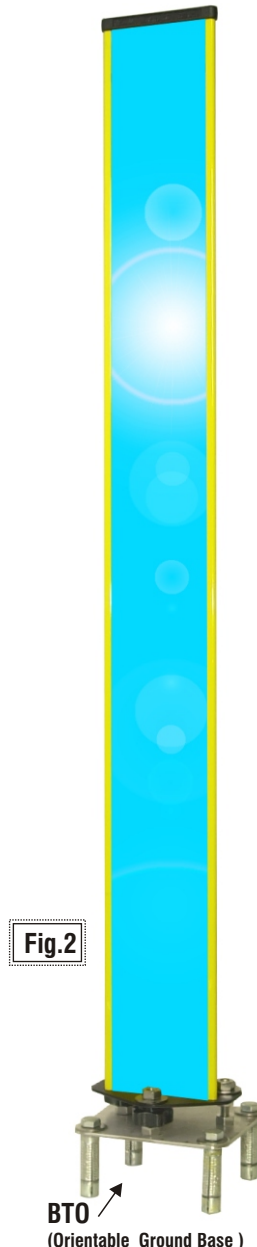
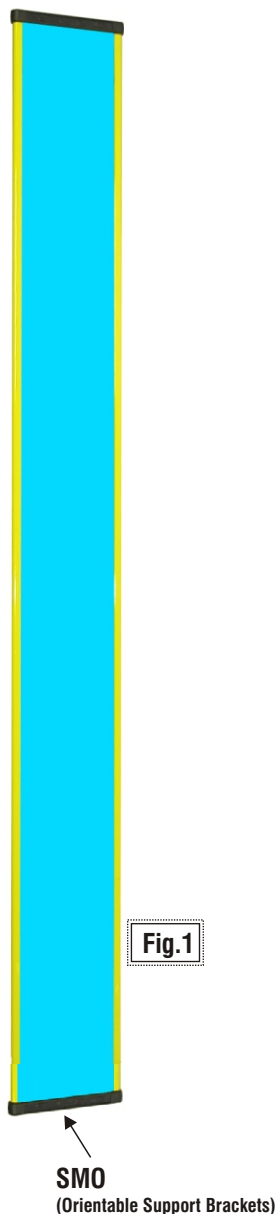
BOX-MUT

BOX-MUT IP66

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The mirrors for immaterial enclosures can be orientable (SMO) or supplied with Orientable/movable Ground Base (BTO).

The mirror is inserted into a V aluminium housing yellow coloured RAL1021 as foreseen in the standards for all the safety components used in the industry.

It is normally supplied by including Orientable Support Brackets (SMO) for attachment. (Fig.1 and Fig.3)

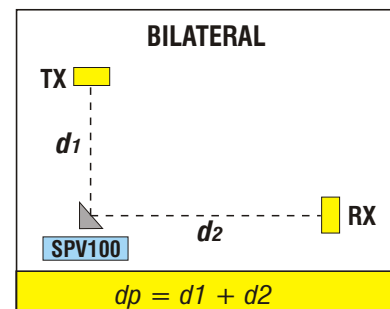
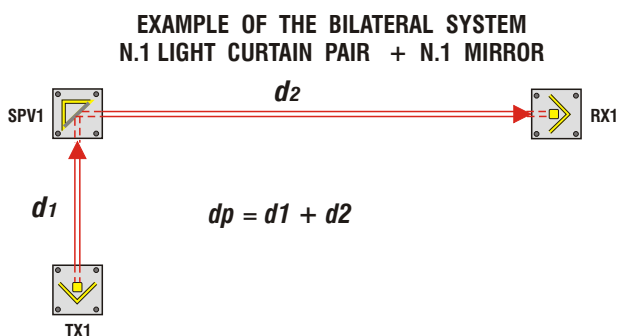
The mirror SPV100 used with its Orientable/movable Ground Base (BTO) (optional) is easier to install and it allows a precise adjustment. (Fig.2 and Fig.4)

The use of the mirror reduces the total distance between TX and RX as indicated in the paragraph ATTENUATION CALCULATIONS.

The mirror height is calculated when you order according to the lightguard model you order.

Anyway if you want to know effective height of the mirror (HU) you add 200 mm to the protected height (HP) of the light curtain chosen if the mirror is required with fastening SMO (Orientable Support Brackets) or you add 360mm to the protected height (HP) if the mirror is required with the BTO (Orientable Ground Base).

ATTENUATION CALCULATIONS (one mirror)



where dp = perimeter

ATTENUATION MIRROR 20%

Perimetral max distance of the Light Curtain divides up model is :

NR = 6 meters - 20% = 4,8 meters
MR = 16 meters - 20% = 12,8 meters
HR = 30 meters - 20% = 24,0 meters

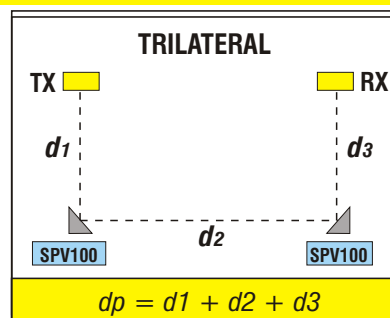

$$\text{HR} = 30 \text{ meters} - 36\% = 19,2 \text{ meters}$$

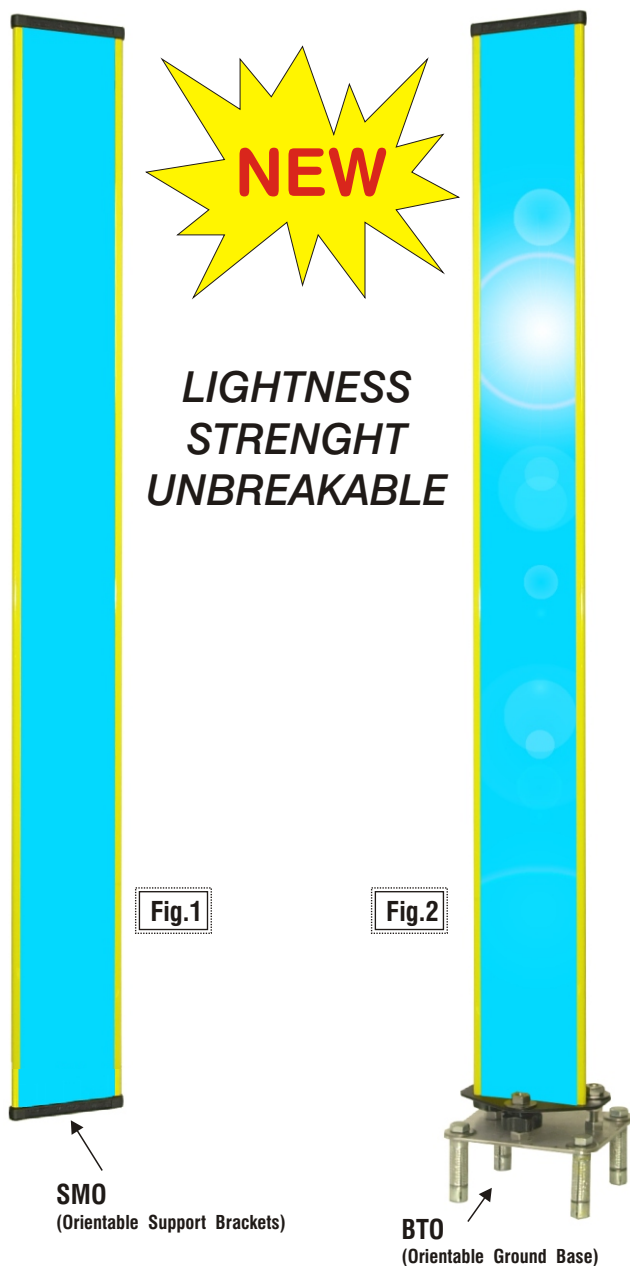
Fig.3

Fig.

PROTECTED HEIGHT LIGHT CURTAIN	+ 200mm if	OPTION SMO
PROTECTED HEIGHT LIGHT CURTAIN	+ 360mm if	OPTION BTO



page 2/2



The mirrors "SPV100 PLUS" for the realization of enclosure are **light, strong and unbreakable**.

These features gives the mirror "SPV100 PLUS" can be used in environments where the traditional one can not be used (example food processing).

The mirror is inserted into a V aluminium housing yellow coloured RAL1021 as forseen in the standards for all the safety components used in the industry.

It is normally supplied by including Orientable Support Brackets (SMO) for attachment (Fig.1 and Fig.3).

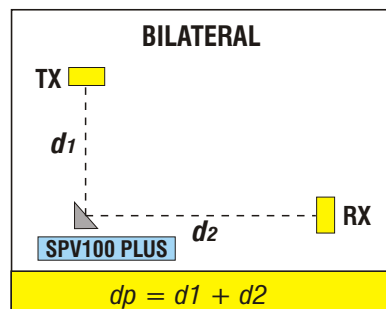
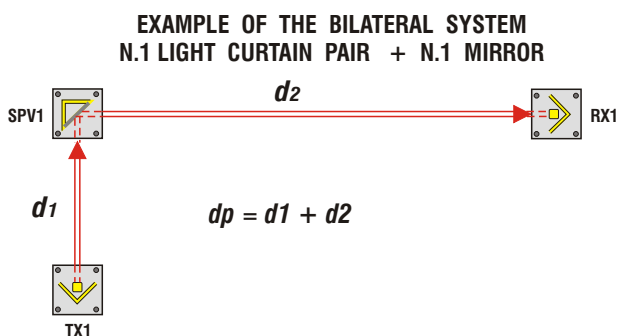
The SPV100 mirror used with its Orientable/movable Ground Base (BTO) is easier to install even allowing precise alignment. (Fig.2 and Fig.4)

The use of the mirror reduces the total distance between TX and RX as indicated in the paragraph ATTENUATION CALCULATIONS.

The mirror height is calculated when you order according to the lightguard model you order.

Anyway if you want to know effective height of the mirror (HU) you add 200mm to the protected height (HP) of the lightguard chosen if the mirror is required with fastening SMO (Orientable Support Brackets) or you add 360mm to the protected height (HP) if the mirror is required with the BTO (Orientable/movable Ground Base).

ATTENUATION CALCULATIONS (one mirror)



where dp = perimeter

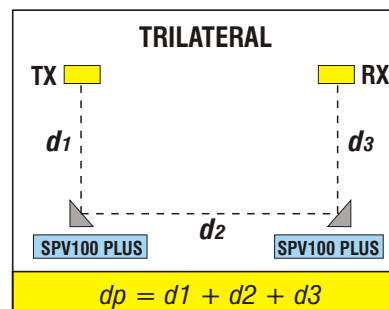
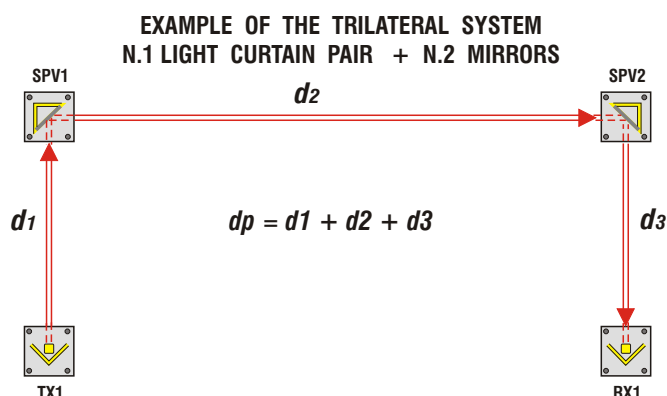
ATTENUATION MIRROR 25%

Perimetral max distance of the Light Curtain divides up model is :

NR = 6 meters - 25% = 4,5 meters

MR = 16 meters - 25% = 12,0 meters

HR = 30 meters - 25% = 22,5 meters



where dp = perimeter

ATTENUATION MIRROR 45%

Perimetral max distance of the Light Curtain divides up model is :

NR = 6 meters - 45% = 3,3 meters

MR = 16 meters - 45% = 8,8 meters

HR = 30 meters - 45% = 16,5 meters

TECHNICAL FEATURES

Chemical Resistance

Following is a brief list of all chemical products that in contact with the mirror **"SPV100 PLUS"** may damage this.

You should not use the following chemical products :

- Benzene
- Carbone Tetrachloruro
- Etere
- Alcool Ethyl
- Esterstoluene
- Ketones
- Lacquer Thinners
- Methyl Alcool

Inflammability

The mirror **"SPV100 PLUS"** is combustibile.

They must also be observed with the material all the precautions taken to protect the wood and other fuels in flames and high temperatures.

Cleaning

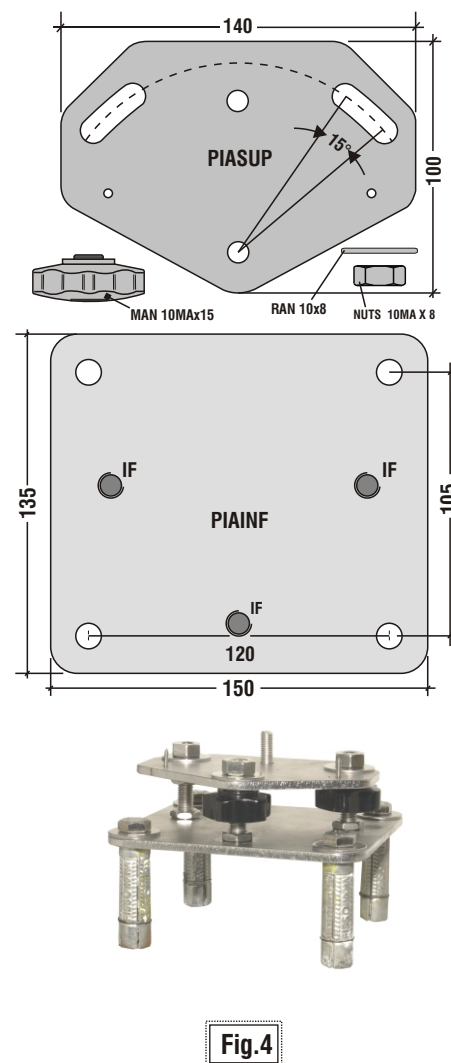
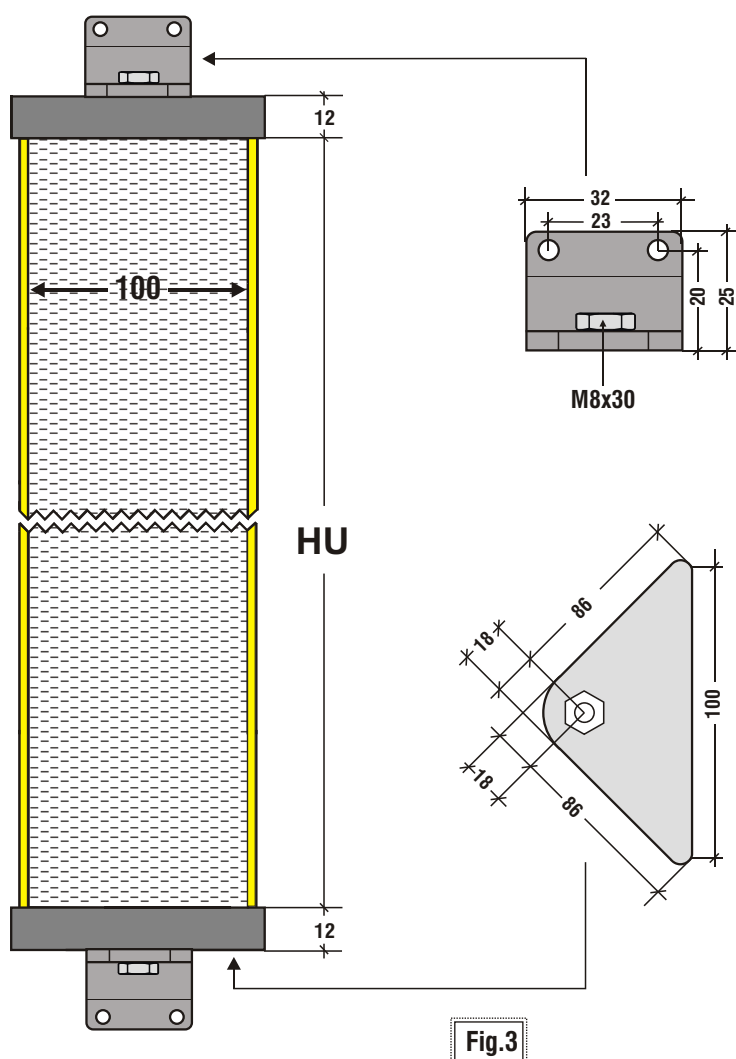
To clean the surface of the mirror **"SPV100 PLUS"**, you should use a mild soap, water and a soft cloth using light pressure.

To remove grease, oil or tar residue on the material you need to use hexane, kerosene and naphtha.

We don't recommend the use of chemicals, no sprays too aggressive to the glasses.

Weight - Strenght

The mirror plate is very light. It weights less than half of the glass and has a resistance 14 times higher than the glass itself.



HOW TO ORDER

Product Code OPTIONS
 SPV100 PLUS -

HU
 height effective mirror

SMO
 BTO

PROTECTED HEIGHT LIGHT CURTAIN + 200mm if OPTION SMO
 PROTECTED HEIGHT LIGHT CURTAIN + 360mm if OPTION BTO

WARNING!!! When ordering always indicate the length of the perimeter sides (See ATTENUATION CALCULATIONS)

CB 60 - CB60 THERM

IP67 TRANSPARENT CYLINDRIC HOUSING WITH INTERNAL HEATER OPTION



Suitable models **LC3 PXXX**

Housing Material **Thermoplastic PMMA** (polymethyl methacrylate)

Mounting **SMO** (orientable support brackets)

Output **Connectors M12**

Protection Degree **IP67**

Resistance to the atmospheric agents

- Alkaline substances
- weak acid
- neutral soap
- alcohol 60°

Not resistance to the chemical agents

- aliphatic hydrocarbon
- hydrocarbon aromatic composit
- gas oil

TECHNICAL FEATURES TRANSPARENT CYLINDRIC BOX

Breaking load (5mm/min)	73 MPa ISO/R 527
Bumps resistance (+23°C)	6 KJ/m2 ISO 179/1 e U
Elastic module at traction	3200 MPa DIN53547
Linear thermic dilatation	0,8 E-4/PC ASTM E831
Deformation to the heat	0,45 MPa ISO75

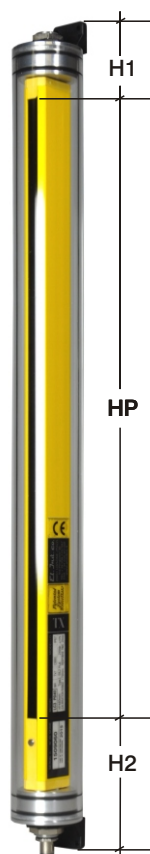


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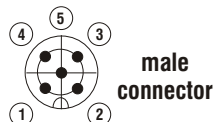
page 1/2

**models LC3**
 $HT = HP + H1 + H2$
 $H1 = 69 \text{ mm}$
 $H2 = 106 \text{ mm}$
LEGEND

- 1 = Transparent thermoplastic I.R.
- 2 = Tin cap aluminium
- 3 = Elastomeric gasket
- 4 = Hexagonal nut 1/2 inch x 4 mm INOX A2
- 5 = Plug M12
- 6 = Orientable bracket in polyamides reinforced with glass fiber

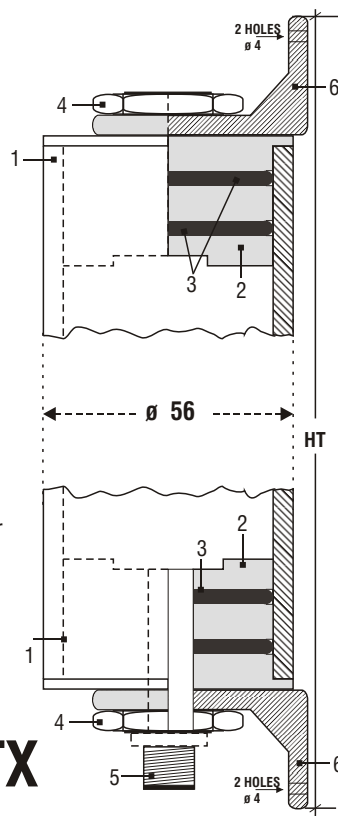
CONNECTIONS FOR THE CB 60**RX**

- 1) White = EDM / (SRS optional)
- 2) Brown = + 24Vdc
- 3) Green = SW1
- 4) Yellow = SW2
- 5) Grey = CONTACTS IN ALARM STATE
- 6) Pink = -
- 7) Blue = -
- 8) Red = MODE
- Shield =

**TX**

- 1) Brown = + 24Vdc
- 2) White = TEST INPUT
- 3) Blue = -
- 4) Black = TEST INPUT
- 5) Grey = N.C.
- Shield =

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

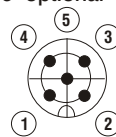
**CONNECTIONS FOR THE CB60 THERM**

N.B. The lightguards in the CB THERM can not be implemented with the optional SRS/EDM

RX

- 1) White =
 - 2) Brown = + 24Vdc
 - 3) Green = SW1
 - 4) Yellow = SW2
 - 5) Grey =
 - 6) Pink =
 - 7) Blue =
 - 8) Red =
 - Shield =
- Power supply internal heater 24Vdc

male connectors

**TX**

- 1) Brown = + 24Vdc
 - 2) White = TEST INPUT
 - 3) Blue =
 - 4) Black =
 - 5) Grey =
 - Shield =
- Power supply internal heater 24Vdc

TEST INPUT = Opening contact TEST INPUT (PIN2/3) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

HOW TO ORDER

Product Code

CB60**CB60 THERM**

WITH INSIDE HEATHER

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NEW 2012 - IP69K



Suitable models	LC3 PXXX
-----------------	----------

Housing Material	Thermoplastic PMMA (polymethyl methacrylate)
------------------	--

Mounting	SMO (orientable support brackets)
----------	-----------------------------------

Output	Connectors M12
--------	----------------

Protection Degree	IP69K
-------------------	-------

Resistance to the atmospheric agents	<ul style="list-style-type: none"> - Alkaline substances - weak acid - neutral soap - alcohol 60°
--------------------------------------	---

Not resistance to the chemical agents	<ul style="list-style-type: none"> - aliphatic hydrocarbon - hydrocarbon aromatic composit - gas oil
---------------------------------------	---

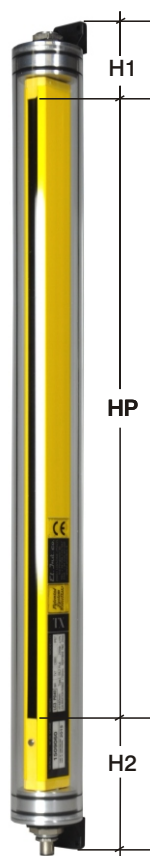
CERTIFICATO DI CONFORMITA' IP69K



No. AK 60042095 0001

TECHNICAL FEATURES TRANSPARENT CYLINDRIC BOX

Breaking load (5mm/min)	73 MPa ISO/R 527
Bumps resistance (+23°C)	6 KJ/m2 ISO 179/1 e U
Elastic module at traction	3200 MPa DIN53547
Linear thermic dilatation	0,8 E-4/PC ASTM E831
Deformation to the heat	0,45 MPa ISO75

**models LC3**

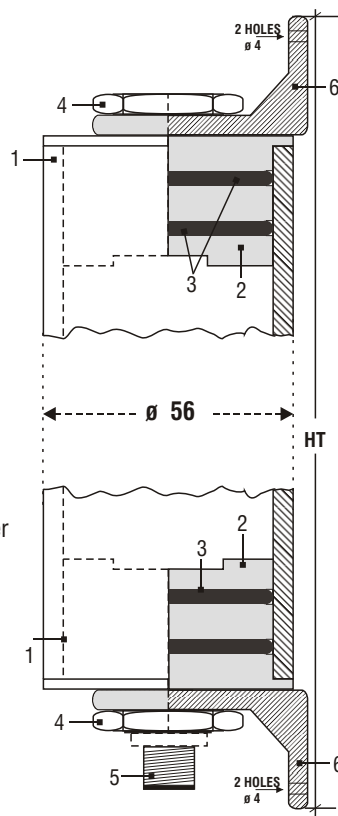
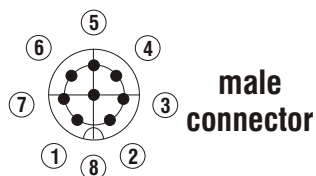
$$HT = HP + H1 + H2$$

$$H1 = 69 \text{ mm}$$

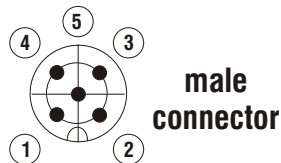
$$H2 = 106 \text{ mm}$$

LEGEND

- 1 = Transparent thermoplastic I.R.
- 2 = Tin cap aluminium
- 3 = Elastomeric gasket with silicone rubber
- 4 = Hexagonal nut 1/2 inch x 4 mm INOX A2
- 5 = Plug M12
- 6 = Orientable bracket in polyamides reinforced with glass fiber

**CONNECTIONS LC3 PXXX IN CB60 - IP69K****RX**

- | | |
|-----------|------------------------|
| 1) White | = EDM / (SRS optional) |
| 2) Brown | = + 24Vdc |
| 3) Green | = SW1 |
| 4) Yellow | = SW2 |
| 5) Grey | = |
| 6) Pink | = |
| 7) Blue | = — |
| 8) Red | = MODE |
| Shield | = |
- CONTACTS IN ALARM STATE

**TX**

- | | |
|----------|--------------|
| 1) Brown | = + 24Vcc |
| 2) White | = TEST INPUT |
| 3) Blue | = — |
| 4) Black | = TEST INPUT |
| 5) Grey | = N.C. |
| Shield | = |

TEST INPUT = Opening contact TEST INPUT (PIN2/4) is simulated the interruption of the curtain and testing the correct opening of the outputs SW1 - SW2 of the receiving unit

HOW TO ORDER

Product Code
CB60 - IP69K



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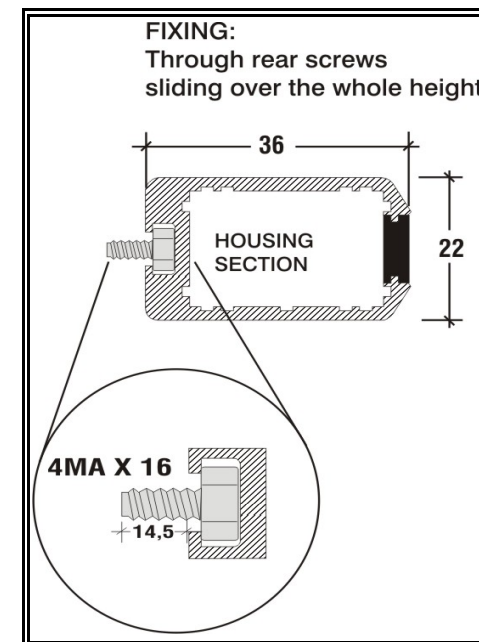
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QUICK GUIDE TO THE CHOICE OF MODEL "FLY PXXX"

Model	FLY P004		FLY P008		FLY P016	
Number rays	Height (HP) (HT)		Height (HP) (HT)		Height (HP) (HT)	
5 x 5			66	145	127	206
7 x 7					188	267
9 x 9	66	145	127	206	249	328
11 x 11					310	389
13 x 13			188	267	371	450
15 x 15					432	511
17 x 17	127	206	249	328	493	572
19 x 19					554	633
21 x 21			310	389	615	694
23 x 23					676	755
25 x 25	188	267	371	450	737	816
27 x 27					798	877
29 x 29			432	511	859	938
31 x 31					920	999
33 x 33	249	328	493	572	981	1060
35 x 35					1042	1121
37 x 37			554	633	1103	1182
39 x 39					1164	1243
41 x 41	310	389	615	694	1225	1304



HP= Controlled Height in mm
HT= Total Height in mm
PXXX= Resolution of the light curtain (EX: P008= Resolution 8 mm)

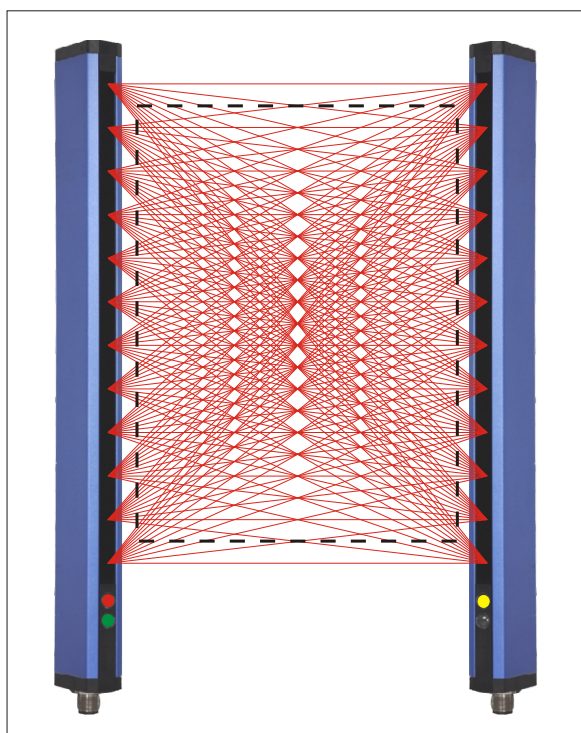
Note: The columns show all important dimensions for the various measures. In the drawing is shown the section of the Light curtain

Note: On request we can supply different heights and resolutions



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Lissone 05/03/2016



Resolution 4 mm

Controlled Height 66 ÷ 310 mm

Controlled Range HP ÷ 4000 mm

Outputs 2 PNP

Directives 2014/30/EC - 2014/35/EC

Light Curtain for the detection at infrared rays for the control - automation - objects presence control on areas - object passage detection on a conveyor - pieces counting - etc ..

Light Curtain FLY-P004 are NOT safety devices and must not be used for safety control of the machines on which they are installed.

CONTROLLED AREAS HEIGHT

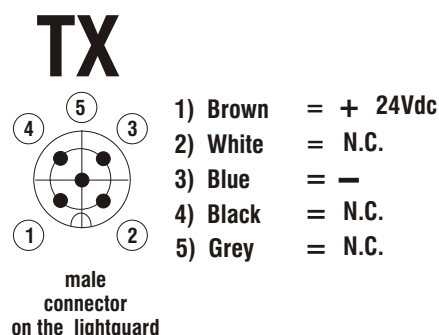
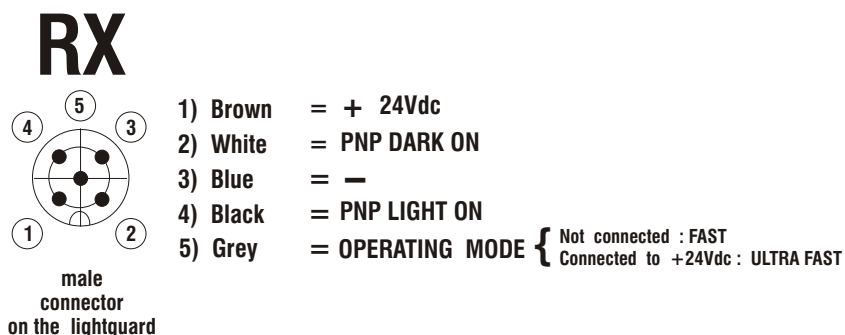
Product Code	Controlled Height Presence Detection	HP mm Counting (hatch area recommended)	Total Height HT mm	Response Time ms (*)	Working Distance controlled min/max mm
FLY-P004-0066	66	58	145	2,6	HP - 4000
FLY-P004-0127	127	119	206	4,7	HP - 4000
FLY-P004-0188	188	180	267	6,8	HP - 4000
FLY-P004-0249	249	241	328	8,9	HP - 4000
FLY-P004-0310	310	302	389	11,0	HP - 4000

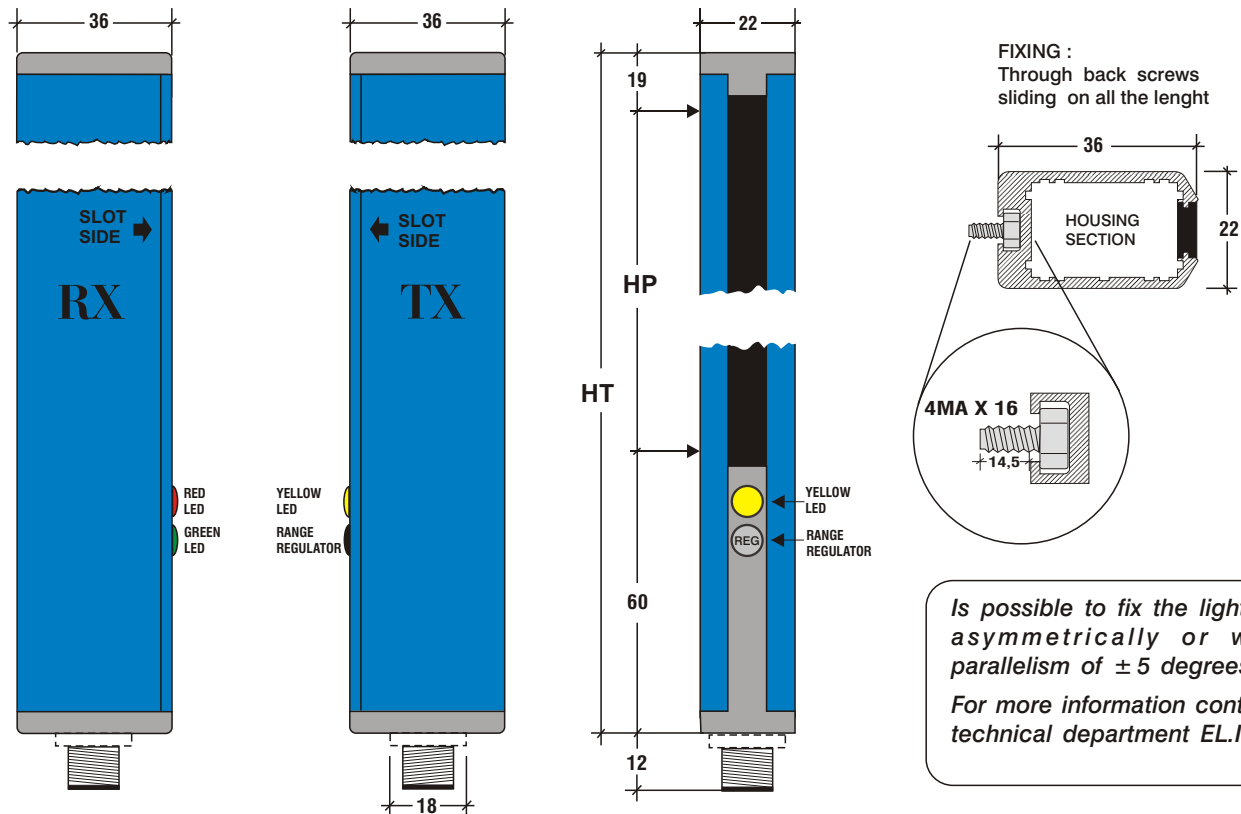
(*) The object to be detected must occlude the curtain for a time equal to or greater than the response time

Power Supply	24Vdc \pm 10% (You may use the same power for both units TX/RX) Protection against reverse polarity
Absorption TX - RX Units	130 mA max exclusive of load
Outputs	2 PNP static outputs + 1 Light ON + 1 Dark ON max 150 mA
Output Protection	Short circuit and overload (In case of short circuit and / or remove the overload power for at least 3 seconds)
Operating Mode	Fast up to 500 pcs / min - Ultra fast up to 2000 pcs / min (depending on the length of the object to be detected)
Time Pulse Output	Fast minimum 100 ms - Ultra fast minimum 15 ms
LED Signallings	<p>TX Unit</p> <ul style="list-style-type: none"> - Yellow Led ON = Power Supply <p>RX Unit</p> <ul style="list-style-type: none"> - Green Led ON = Curtain free - Red Led ON = Curtain occluded - Green and Red Led ON = Overload / Short circuit
Working Temperature	0 / +50 °C
TX - RX Connection	Nr. 2 Connectors M12 5 poles female to wire driving included in the supply
Synchronism	Optical
Housing	Polished Aluminium BLU RAL5015
Housing Section	22 x 36 mm
Protection Degree	IP54 (option IP67 - IP69K)
Fixing	Through back screws sliding on the length 4MA x 16

PRECAUTIONS

- Avoid installations near sources of light very intense, especially in proximity of the receiving unit.
- The presence of strong electromagnetic interference could influence the correct functioning of the device.
- Reflective surfaces placed in the proximity of the device can introduce passive reflections that can affect the detection of the object inside the controlled area.
- If you need to install more devices should be avoided adjacent to the emitter of a device is interfering with the receiver of another device.

CONNECTION ELECTRIC DIAGRAM




MOUNTING - ALIGNMENT

Install the two units TX (transmitter) and RX (receiver) to the operating distance of work indicated on the data written on the labels so that they are as parallel as possible.

RECALIBRATION

In case you need to change the working distance between the TX and RX perform the following procedure : turn the trimmer cap under the "Range Regulator" counter-clockwise until the full scale and give power to both units simultaneously TX and RX.

On the TX light will be yellow and the red light on the RX.

Turn the trimmer slowly clockwise until it causes the drive RX switching the lamp from RED to GREEN.

This operation must be done at least twice.

The final position of the trimmer will be the closest point to the stable release of the switching GREEN-RED of the lights.

We recommend that you perform this procedure after selecting the operating mode FAST or ULTRAFAST or after any change of operating mode.

HOW TO ORDER

Product Code

Distances

FLY-P004-0127 - - - -

Working distance in mm.

To be indicated on the order. The light curtain will be supplied pre calibrated for **an immediate adjustment**

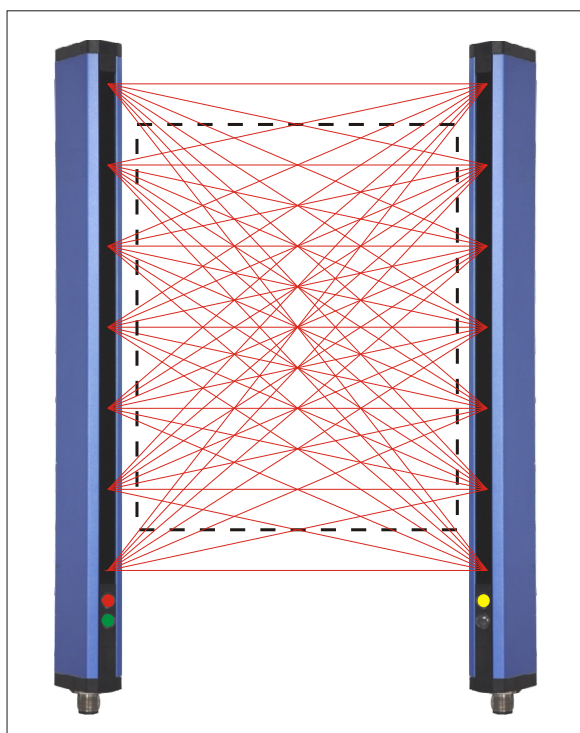
Example : FLY-P004-0127 - 1000



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MARCH 2016

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Resolution 8 mm

Controlled Height 66 ÷ 554 mm

Controlled Range HP ÷ 4000 mm

Outputs 2 PNP

Directives 2014/30/EC - 2014/35/EC

Light Curtain for the detection at infrared rays for the control - automation - objects presence control on areas - object passage detection on a conveyor - pieces counting - etc ..

Light Curtain FLY-P008 are NOT safety devices and must not be used for safety control of the machines on which they are installed.

CONTROLLED AREAS HEIGHT

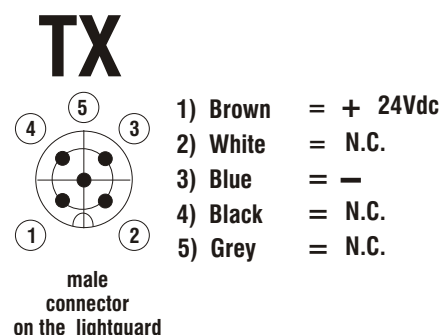
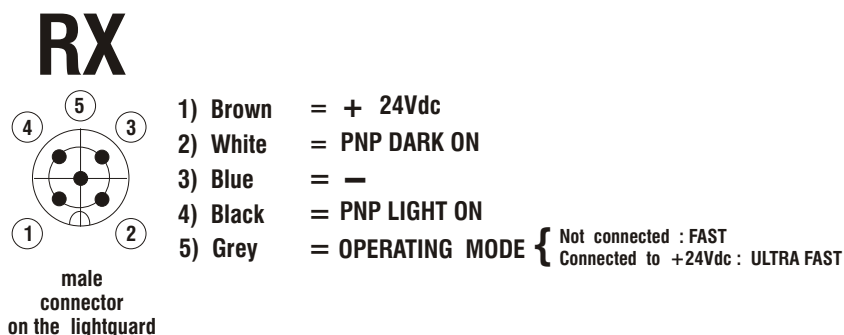
Product Code	Controlled Height Presence Detection HP mm	Counting (hatch area recommended)	Total Height HT mm	Response Time ms (*)	Working Distance controlled min/max mm
FLY-P008-0066	66	50	145	1,5	HP - 4000
FLY-P008-0127	127	111	206	2,6	HP - 4000
FLY-P008-0188	188	172	267	3,6	HP - 4000
FLY-P008-0249	249	233	328	4,7	HP - 4000
FLY-P008-0310	310	294	389	5,7	HP - 4000
FLY-P008-0371	371	355	450	6,8	HP - 4000
FLY-P008-0432	432	416	511	7,8	HP - 4000
FLY-P008-0493	493	477	572	8,9	HP - 4000
FLY-P008-0554	554	538	633	9,9	HP - 4000

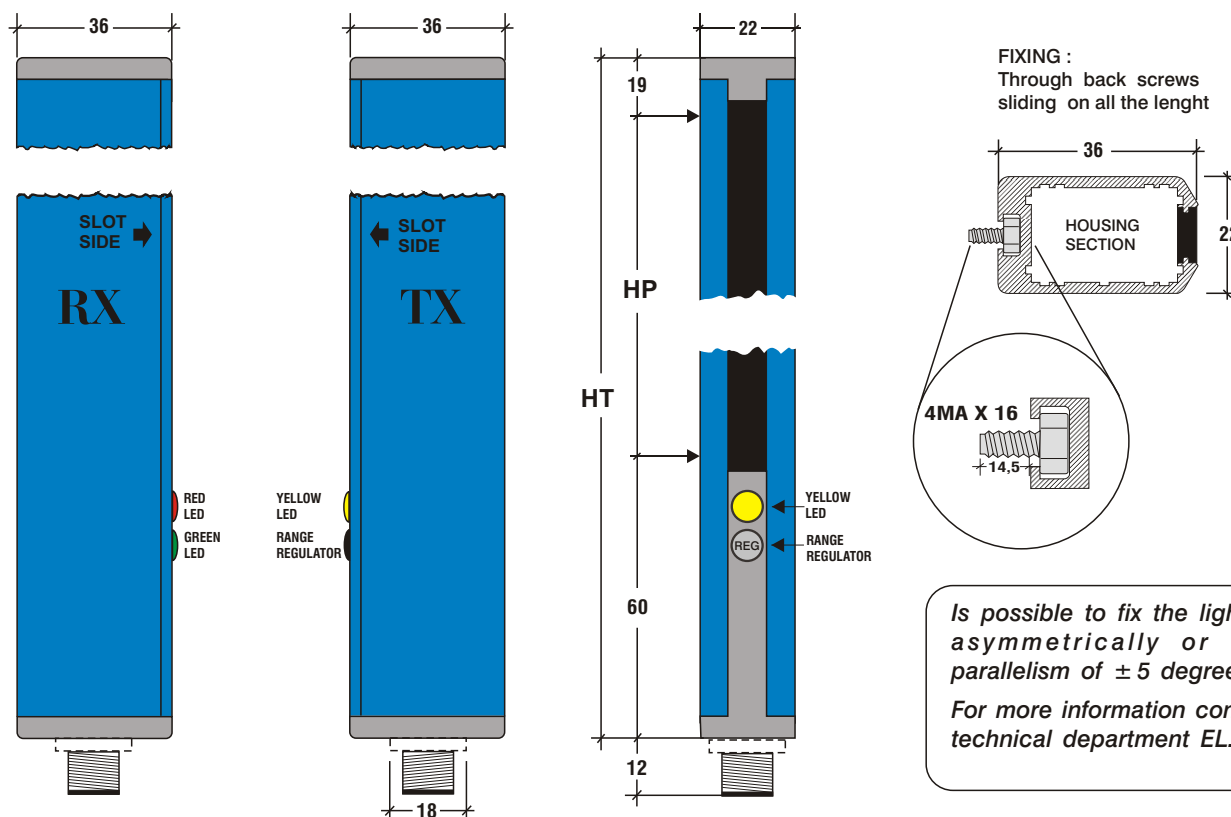
(*) The object to be detected must occlude the curtain for a time equal to or greater than the response time

Power Supply	24Vdc \pm 10% (You may use the same power for both units TX/RX) Protection against reverse polarity
Absorption TX - RX Units	130 mA max exclusive of load
Outputs	2 PNP static outputs + 1 Light ON + 1 Dark ON max 150 mA
Output Protection	Short circuit and overload (In case of short circuit and / or remove the overload power for at least 3 seconds)
Operating Mode	Fast up to 500 pcs / min - Ultra fast up to 2000 pcs / min (depending on the length of the object to be detected)
Time Pulse Output	Fast minimum 100 ms - Ultra fast minimum 15 ms
LED Signallings	<p>TX Unit</p> <ul style="list-style-type: none"> - Yellow Led ON = Power Supply <p>RX Unit</p> <ul style="list-style-type: none"> - Green Led ON = Curtain free - Red Led ON = Curtain occluded - Green and Red Led ON = Overload / Short circuit
Working Temperature	0 / +50 °C
TX - RX Connection	Nr. 2 Connectors M12 5 poles female to wire driving included in the supply
Synchronism	Optical
Housing	Polished Aluminium BLU RAL5015
Housing Section	22 x 36 mm
Protection Degree	IP54 (option IP67 - IP69K)
Fixing	Through back screws sliding on the length 4MA x 16

PRECAUTIONS

- Avoid installations near sources of light very intense, especially in proximity of the receiving unit.
- The presence of strong electromagnetic interference could influence the correct functioning of the device.
- Reflective surfaces placed in the proximity of the device can introduce passive reflections that can affect the detection of the object inside the controlled area.
- If you need to install more devices should be avoided adjacent to the emitter of a device is interfering with the receiver of another device.

CONNECTION ELECTRIC DIAGRAM




MOUNTING - ALIGNMENT

Install the two units TX (transmitter) and RX (receiver) to the operating distance of work indicated on the data written on the labels so that they are as parallel as possible.

RECALIBRATION

In case you need to change the working distance between the TX and RX perform the following procedure : turn the trimmer cap under the "Range Regulator" counter-clockwise until the full scale and give power to both units simultaneously TX and RX.

On the TX light will be yellow and the red light on the RX.

Turn the trimmer slowly clockwise until it causes the drive RX switching the lamp from RED to GREEN.

This operation must be done at least twice.

The final position of the trimmer will be the closest point to the stable release of the switching GREEN-RED of the lights.

We recommend that you perform this procedure after selecting the operating mode FAST or ULTRAFAST or after any change of operating mode.

HOW TO ORDER

Product Code

Distances

FLY-P008-0554 - - - -

Working distance in mm.

To be indicated on the order. The light curtain will be supplied pre calibrated for **an immediate adjustment**

Example : FLY-P008-0554 - 1000

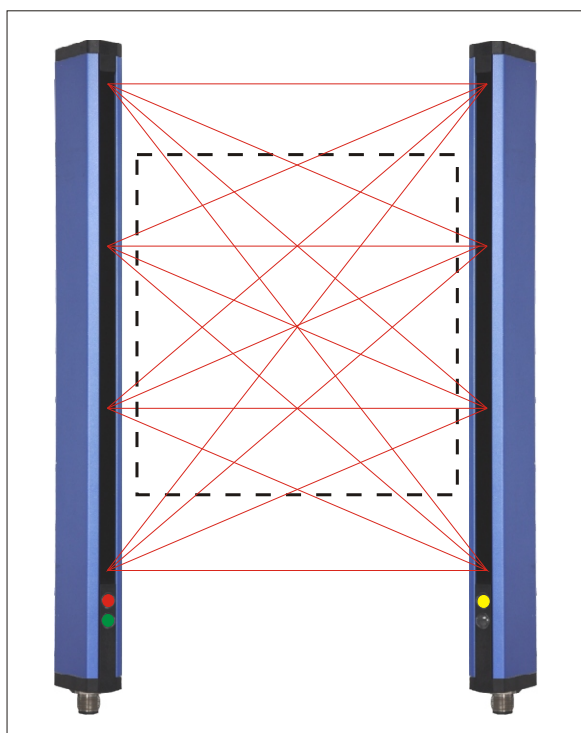


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Resolution 16 mm

Controlled Height 66 ÷ 1164 mm

Controlled Range HP ÷ 4000 mm

Outputs 2 PNP

Directives 2014/30/EC - 2014/35/EC

Light Curtain for the detection at infrared rays for the control - automation - objects presence control on areas - object passage detection on a conveyor - pieces counting - etc ..

Light Curtain FLY-P016 are NOT safety devices and must not be used for safety control of the machines on which they are installed.

CONTROLLED AREAS HEIGHT

Product Code	Controlled Height Presence Detection HP mm	Counting (hatch area recommended)	Total Height HT mm	Response Time ms (*)	Working Distance controlled min/max mm
FLY-P016-0066	66	34	145	1,0	HP - 4000
FLY-P016-0127	127	95	206	1,5	HP - 4000
FLY-P016-0188	188	156	267	2,0	HP - 4000
FLY-P016-0249	249	217	328	2,6	HP - 4000
FLY-P016-0310	310	278	389	3,1	HP - 4000
FLY-P016-0371	371	339	450	3,6	HP - 4000
FLY-P016-0432	432	400	511	4,1	HP - 4000
FLY-P016-0493	493	461	572	4,7	HP - 4000
FLY-P016-0554	554	522	633	5,2	HP - 4000
FLY-P016-0615	615	583	694	5,7	HP - 4000
FLY-P016-0676	676	644	755	6,2	HP - 4000
FLY-P016-0737	737	705	816	6,8	HP - 4000
FLY-P016-0798	798	766	877	7,3	HP - 4000
FLY-P016-0859	859	827	938	7,8	HP - 4000
FLY-P016-0920	920	888	999	8,4	HP - 4000
FLY-P016-0981	981	949	1060	8,9	HP - 4000
FLY-P016-1042	1042	1010	1121	9,4	HP - 4000
FLY-P016-1103	1103	1071	1182	9,9	HP - 4000
FLY-P016-1164	1164	1132	1243	10,5	HP - 4000

(*) The object to be detected must occlude the curtain for a time equal to or greater than the response time



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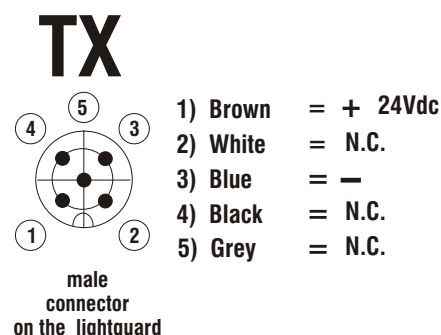
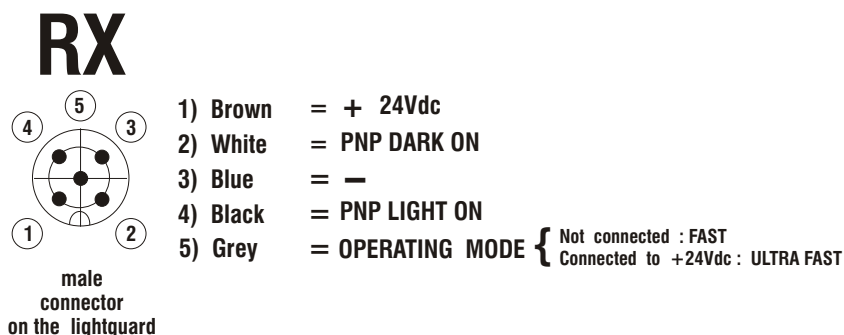
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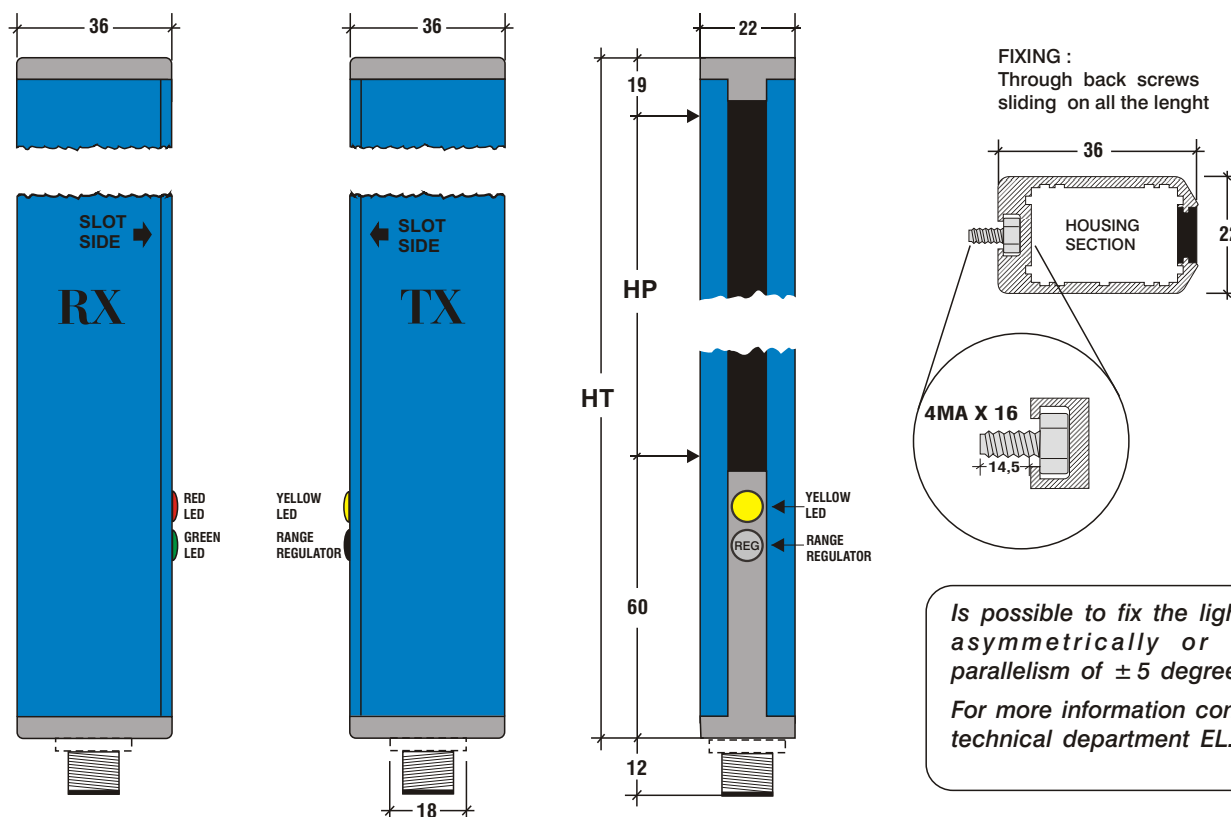
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Power Supply	24Vdc \pm 10% (You may use the same power for both units TX/RX) Protection against reverse polarity
Absorption TX - RX Units	130 mA max exclusive of load
Outputs	2 PNP static outputs + 1 Light ON + 1 Dark ON max 150 mA
Output Protection	Short circuit and overload (In case of short circuit and / or remove the overload power for at least 3 seconds)
Operating Mode	Fast up to 500 pcs / min - Ultra fast up to 2000 pcs / min (depending on the length of the object to be detected)
Time Pulse Output	Fast minimum 100 ms - Ultra fast minimum 15 ms
LED Signallings	<p>TX Unit</p> <ul style="list-style-type: none"> - Yellow Led ON = Power Supply <p>RX Unit</p> <ul style="list-style-type: none"> - Green Led ON = Curtain free - Red Led ON = Curtain occluded - Green and Red Led ON = Overload / Short circuit
Working Temperature	0 / +50 °C
TX - RX Connection	Nr. 2 Connectors M12 5 poles female to wire driving included in the supply
Synchronism	Optical
Housing	Polished Aluminium BLU RAL5015
Housing Section	22 x 36 mm
Protection Degree	IP54 (option IP67 - IP69K)
Fixing	Through back screws sliding on the length 4MA x 16

PRECAUTIONS

- Avoid installations near sources of light very intense, especially in proximity of the receiving unit.
- The presence of strong electromagnetic interference could influence the correct functioning of the device.
- Reflective surfaces placed in the proximity of the device can introduce passive reflections that can affect the detection of the object inside the controlled area.
- If you need to install more devices should be avoided adjacent to the emitter of a device is interfering with the receiver of another device.

CONNECTION ELECTRIC DIAGRAM




MOUNTING - ALIGNMENT

Install the two units TX (transmitter) and RX (receiver) to the operating distance of work indicated on the data written on the labels so that they are as parallel as possible.

RECALIBRATION

In case you need to change the working distance between the TX and RX perform the following procedure : turn the trimmer cap under the "Range Regulator" counter-clockwise until the full scale and give power to both units simultaneously TX and RX.

On the TX light will be yellow and the red light on the RX.

Turn the trimmer slowly clockwise until it causes the drive RX switching the lamp from RED to GREEN.

This operation must be done at least twice.

The final position of the trimmer will be the closest point to the stable release of the switching GREEN-RED of the lights.

We recommend that you perform this procedure after selecting the operating mode FAST or ULTRAFAST or after any change of operating mode.

HOW TO ORDER

Product Code

Distances

FLY-P016-1164 - - - -

Working distance in mm.

To be indicated on the order. The light curtain will be supplied pre calibrated for **an immediate adjustment**

Example : FLY-P016-1164 - 1000



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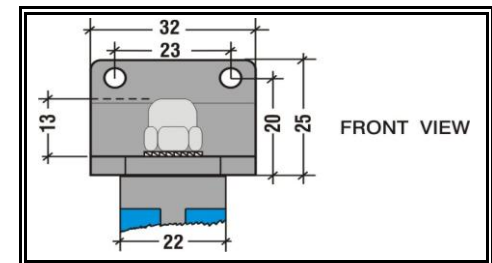
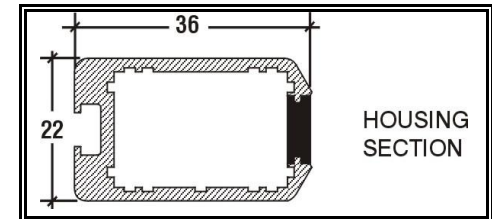
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QUICK GUIDE TO THE CHOICE OF MODEL "FOX PXXX" Fixing SMO

Model	FOX P040		FOX P080		FOX P120		FOX P160	
Number Rays	Height (HP) (HT)		Height (HP) (HT)		Height (HP) (HT)		Height (HP) (HT)	
2 x 2					240	365	320	445
3 x 3	160	285	320	445	480	605	640	765
4 x 4	240	365	480	605	720	845	960	1085
5 x 5	320	445	640	765	960	1085	1280	1405
6 x 6	400	525	800	925	1200	1325	1600	1725
7 x 7	480	605	960	1085	1440	1565	1920	2045
8 x 8	560	685	1120	1245	1680	1805		
9 x 9	640	765	1280	1405	1920	2045		
10 x 10	720	845	1440	1565				
11 x 11	800	925	1600	1725				
12 x 12	880	1005	1760	1885				
13 x 13	960	1085	1920	2045				
14 x 14	1040	1165						
15 x 15	1120	1245						
16 x 16	1200	1325						
17 x 17	1280	1405						
18 x 18	1360	1485						
19 x 19	1440	1565						
20 x 20	1520	1645						
21 x 21	1600	1725						
22 x 22	1680	1805						
23 x 23	1760	1885						
24 x 24	1840	1965						
25 x 25	1920	2045						



HP= Protected Height
HT= Total Height including orientable support brackets (SMO)
PXXX= Resolution of the light curtain (EX: P080= Resolution 80mm)

Note: In the columns all the important dimensions for the various sizes are reported. For the hole interaxes 10 mm are to be deducted from the total eight. In the drawings are indicated the quote for fixing holes

Note: On request we can provide other resolutions

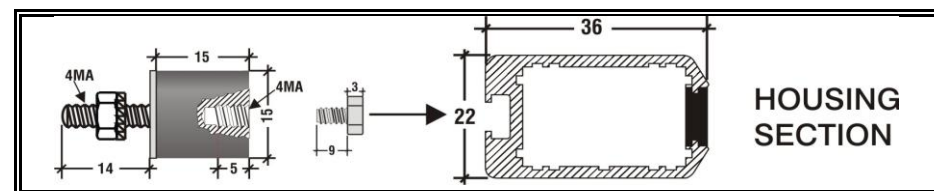


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Lissone 26 Settembre 2016

QUICK GUIDE TO THE CHOICE OF MODEL "FOX PXXX" Fixing SEA

Model	FOX P040		FOX P080		FOX P120		FOX P160	
Number Rays	Height (HP) (HT)		Height (HP) (HT)		Height (HP) (HT)		Height (HP) (HT)	
2 x 2					240	315	320	395
3 x 3	160	235	320	395	480	555	640	715
4 x 4	240	315	480	555	720	795	960	1035
5 x 5	320	395	640	715	960	1035	1280	1355
6 x 6	400	475	800	875	1200	1275	1600	1675
7 x 7	480	555	960	1035	1440	1515	1920	1995
8 x 8	560	635	1120	1195	1680	1755		
9 x 9	640	715	1280	1355	1920	1995		
10 x 10	720	795	1440	1515				
11 x 11	800	875	1600	1675				
12 x 12	880	955	1760	1835				
13 x 13	960	1035	1920	1995				
14 x 14	1040	1115						
15 x 15	1120	1195						
16 x 16	1200	1275						
17 x 17	1280	1355						
18 x 18	1360	1435						
19 x 19	1440	1515						
20 x 20	1520	1595						
21 x 21	1600	1675						
22 x 22	1680	1755						
23 x 23	1760	1835						
24 x 24	1840	1915						
25 x 25	1920	1995						



HP= Protected Height
HT= Total Height including orientable support brackets (SMO)
PXXX= Resolution of the light curtain (EX: P080= Resolution 80mm)

Note: In the columns all the important dimensions for the various sizes are reported.
 For the hole interaxes 10 mm are to be deducted from the total eight. In the drawings are indicated the quote for fixing holes

Note: On request we can provide other resolutions

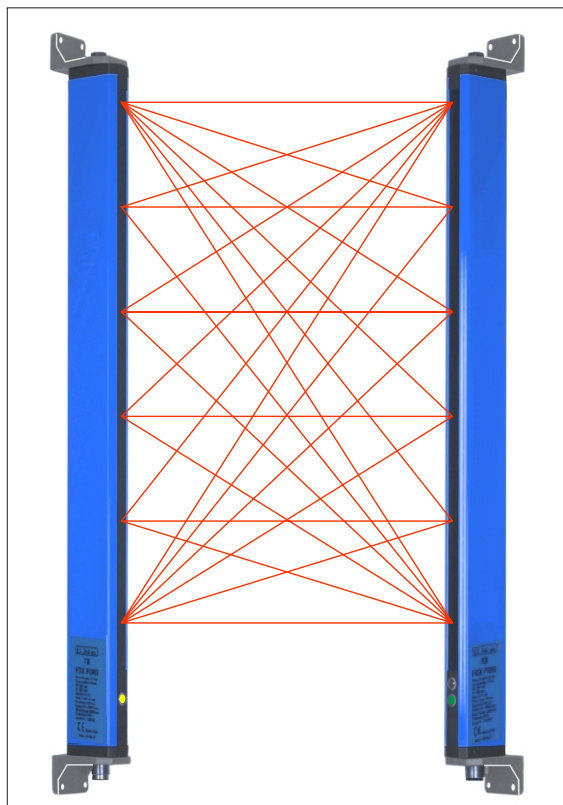


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Lissone 26 Settembre 2016

FOX P040

Light Curtain Presence - Detection



Resolution 40 mm

Protected Height 160 ÷ 1920 mm

Range HP ÷ 30 metri

Output 1 switch - ON/OFF

Directives 2014/30/EC - 2014/35/EC

Light Curtain for the detection at infrared rays for the control - automation - objects presence control on areas - object passage detection on a conveyor - pieces counting - etc ..

Start/Restart : automatic restart of the logic state of the device after an intervention and at its powering on. It is supplied in series with a connector output M12 female 5poles to wire driving and with orientable support brackets (SMO)

PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
FOX - P040	160	285	235	14	3x3
FOX - P040	240	365	315	16	4x4
FOX - P040	320	445	395	18	5x5
FOX - P040	400	525	475	20	6x6
FOX - P040	480	605	555	22	7x7
FOX - P040	560	685	635	24	8x8
FOX - P040	640	765	715	26	9x9
FOX - P040	720	845	795	28	10x10
FOX - P040	800	925	875	30	11x11
FOX - P040	880	1005	955	32	12x12
FOX - P040	960	1085	1035	34	13x13
FOX - P040	1040	1165	1115	36	14x14
FOX - P040	1120	1245	1195	38	15x15
FOX - P040	1200	1325	1275	40	16x16
FOX - P040	1280	1405	1355	42	17x17
FOX - P040	1360	1485	1435	44	18x18
FOX - P040	1440	1565	1515	46	19x19
FOX - P040	1520	1645	1595	48	20x20
FOX - P040	1600	1725	1675	50	21x21
FOX - P040	1680	1805	1755	52	22x22
FOX - P040	1760	1885	1835	54	23x23
FOX - P040	1840	1965	1915	56	24x24
FOX - P040	1920	2045	1995	58	25x25



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SEPTEMBER 2016

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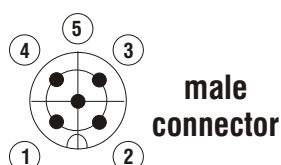
TECHNICAL FEATURES




FOX P040

Applications	PRESENCE - DETECTION
Power Supply	24Vdc \pm 10%
Absorption TX Unit	80 mA max
Absorption RX Unit	70 mA max
Output	1 switch SW1 (ON/OFF) free from potential 0,3 Adc/ac @ 24 Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit - Green Led = Curtain free - Red Led = Curtain occluded
Housing	Polished aluminium BLU RAL 5015
Housing Section	22 x 36 mm
Protection Degree	IP54 (option IP67 - IP69K)
Working Temperature	0 / +55 °C
RX Connection	Connector M12 female 5 poles to wire driving included in the supply
TX Connection	Connector M12 female 5 poles to wire driving included in the supply
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

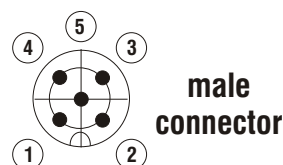
CONNECTION ELECTRIC DIAGRAM


RX



- 1) Brown = + 24Vdc
 2) White =  SW1
 3) Blue = -
 4) Black = 
 5) Grey = N.C.
 Shield = 

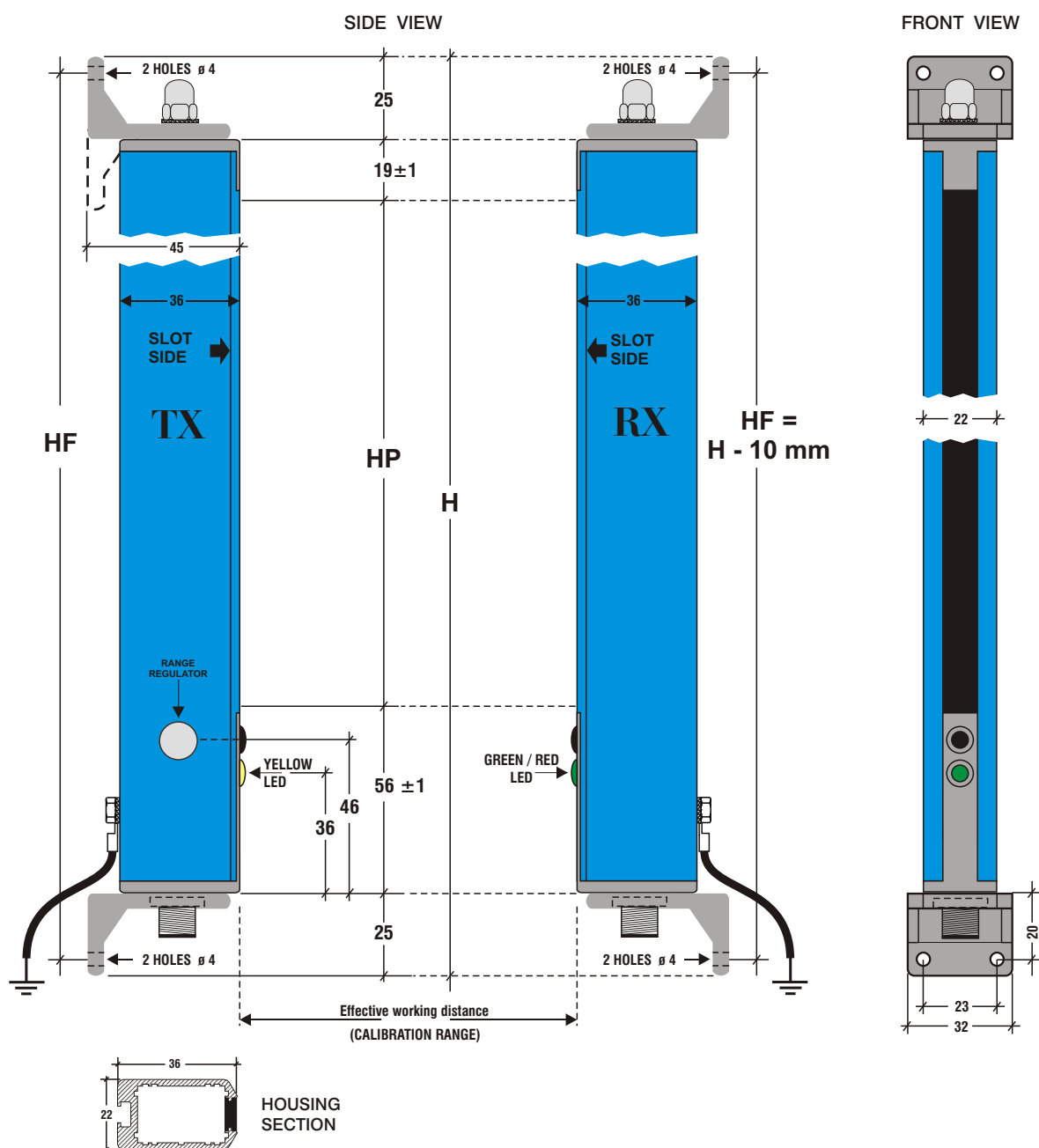
TX



- 1) Brown = + 24Vdc
 2) White = N.C.
 3) Blue = -
 4) Black = N.C.
 5) Grey = N.C.
 Shield = 

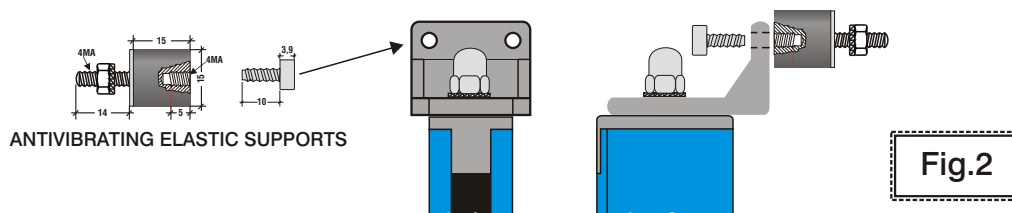
VERSION MOUNTING SOLUTION "SMO" (STANDARD)

Fig.1



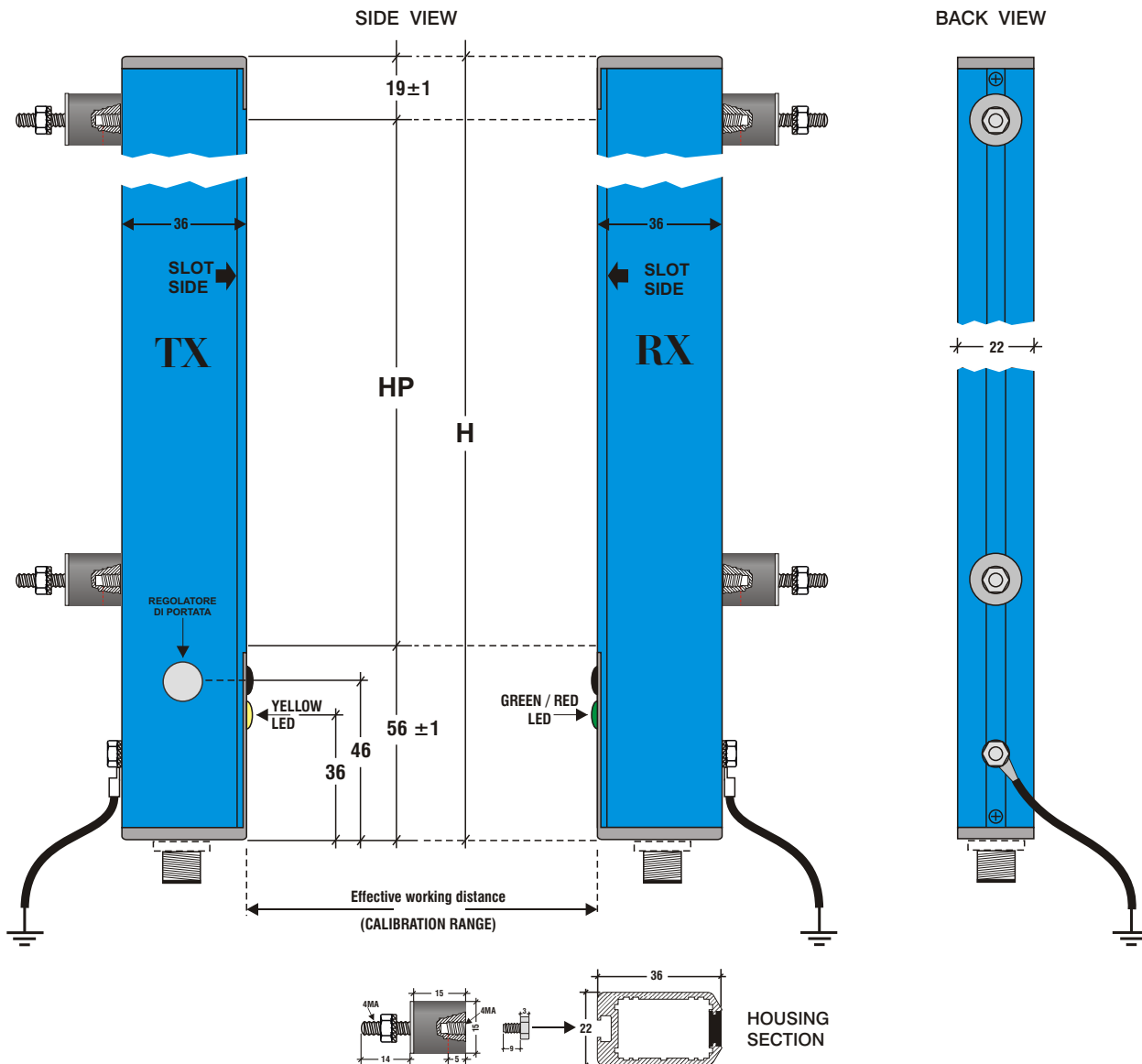
KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H , are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SEA	2	SPV100	9
CB60 IP67	3	SPV100 PLUS	10
CB60 IP69K	4	KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
FOX - P040	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	2 3 4	9 10 14

Example :

FOX - P040 - 160 - 1000 - NR +

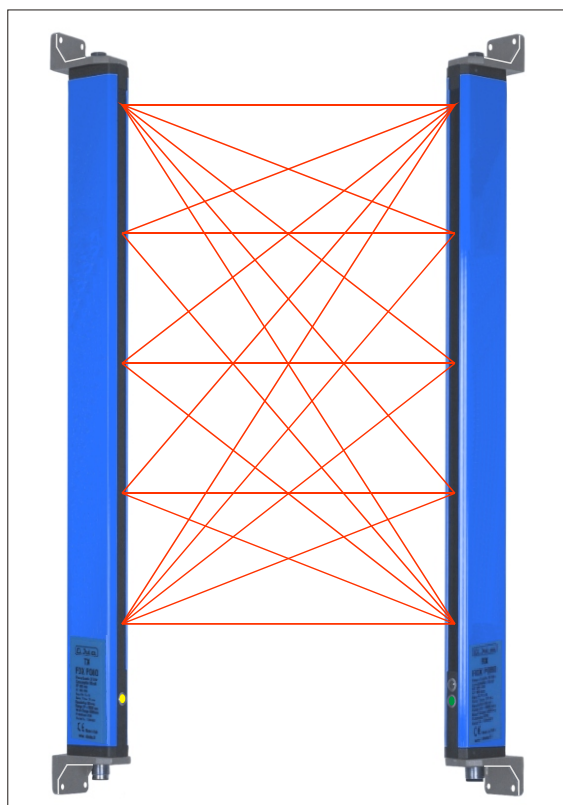
2	-
---	---

 +

-	-	14
---	---	----

FOX P080

Light Curtain Presence - Detection



Resolution 80 mm

Protected Height 320 ÷ 1920 mm

Range HP ÷ 30 metri

Output 1 switch - ON/OFF

Directives 2014/30/EC - 2014/35/EC

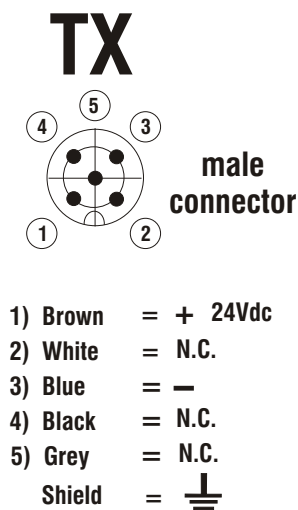
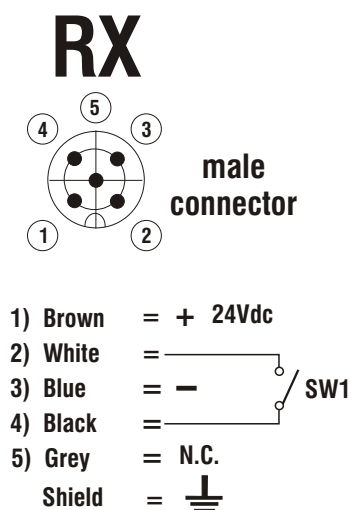
Light Curtain for the detection at infrared rays for the control - automation - objects presence control on areas - object passage detection on a conveyor - pieces counting - etc ..

Start/Restart : automatic restart of the logic state of the device after an intervention and at its powering on. It is supplied in series with a connector output M12 female 5poles to wire driving and with orientable support brackets (SMO)

PROTECTED AREAS HEIGHT

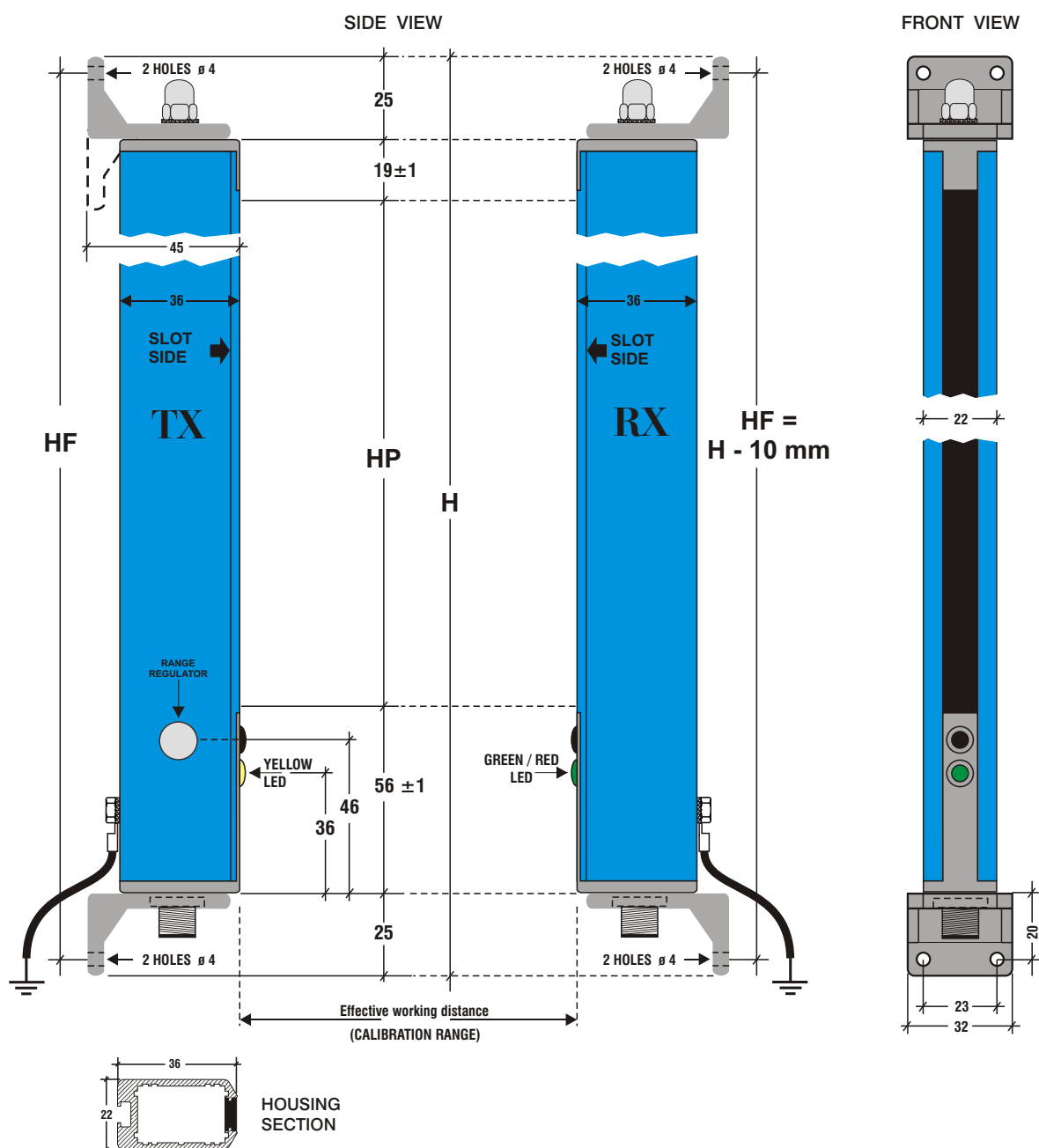
Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
FOX - P080	320	445	395	14	3x3
FOX - P080	480	605	555	16	4x4
FOX - P080	640	765	715	18	5x5
FOX - P080	800	925	875	20	6x6
FOX - P080	960	1085	1035	22	7x7
FOX - P080	1120	1245	1195	24	8x8
FOX - P080	1280	1405	1355	26	9x9
FOX - P080	1440	1565	1515	28	10x10
FOX - P080	1600	1725	1675	30	11x11
FOX - P080	1760	1885	1835	32	12x12
FOX - P080	1920	2045	1995	34	13x13

Applications	PRESENCE - DETECTION
Power Supply	24Vdc \pm 10%
Absorption TX Unit	80 mA max
Absorption RX Unit	70 mA max
Output	1 switch SW1 (ON/OFF) free from potential 0,3 Adc/ac @ 24 Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit - Green Led = Curtain free - Red Led = Curtain occluded
Housing	Polished aluminium BLU RAL 5015
Housing Section	22 x 36 mm
Protection Degree	IP54 (option IP67 - IP69K)
Working Temperature	0 / +55 °C
RX Connection	Connector M12 female 5 poles to wire driving included in the supply
TX Connection	Connector M12 female 5 poles to wire driving included in the supply
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

CONNECTION ELECTRIC DIAGRAM


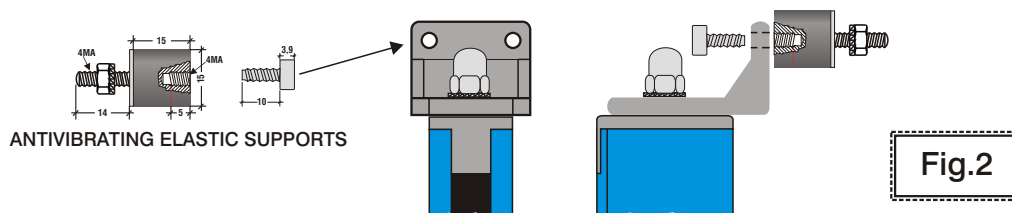
VERSION MOUNTING SOLUTION "SMO" (STANDARD)

Fig.1



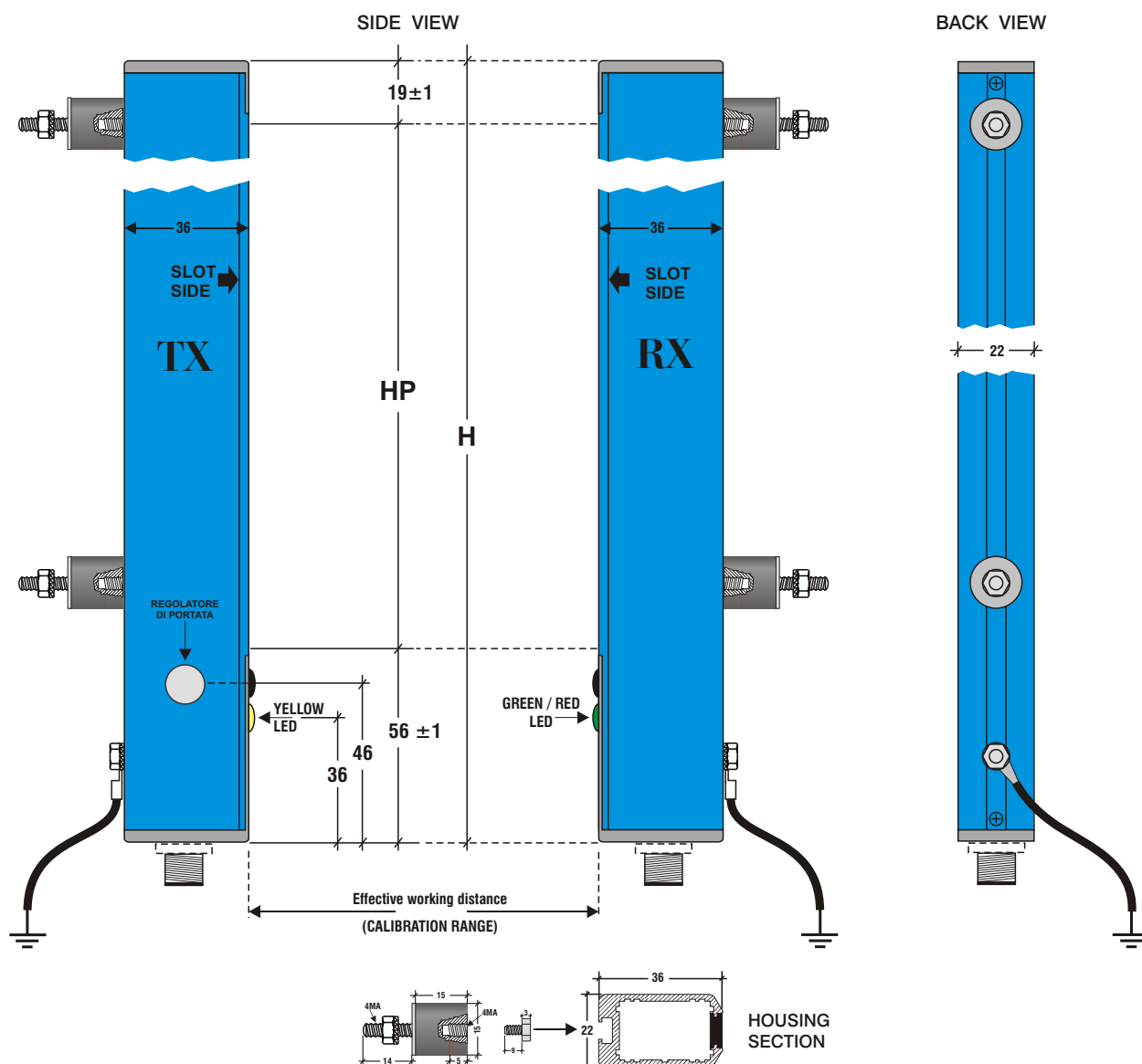
KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H, are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
KIT - 8A	Kit of N° 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SEA	2	SPV100	9
CB60 IP67	3	SPV100 PLUS	10
CB60 IP69K	4	KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
FOX - P080	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	2 3 4	9 10 14

Example :

FOX - P080 - 320 - 1000 - NR +

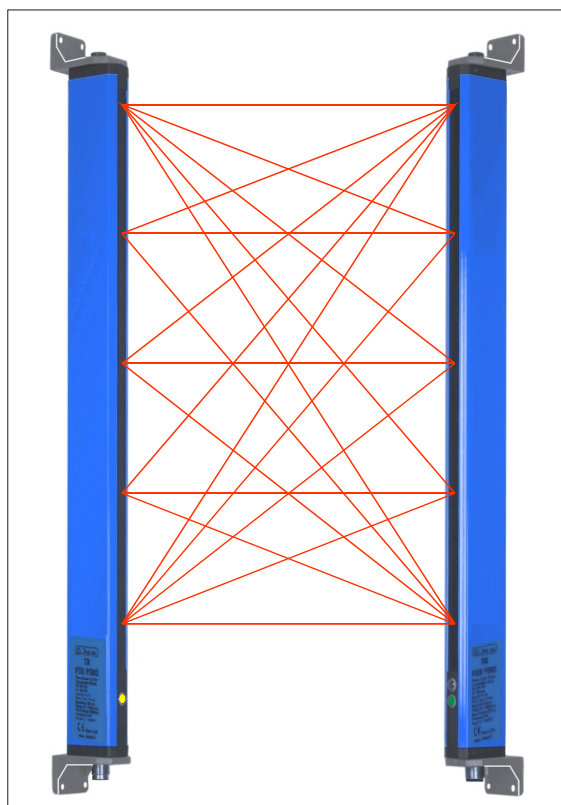
2	-
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 +

-	-	14
---	---	----

FOX P120

Light Curtain Presence - Detection



Resolution 120 mm

Protected Height 240 ÷ 1920 mm

Range HP ÷ 30 metri

Output 1 switch - ON/OFF

Directives 2014/30/EC - 2014/35/EC

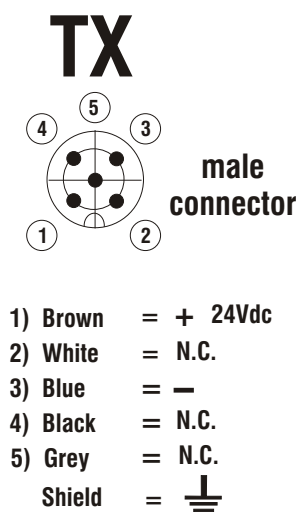
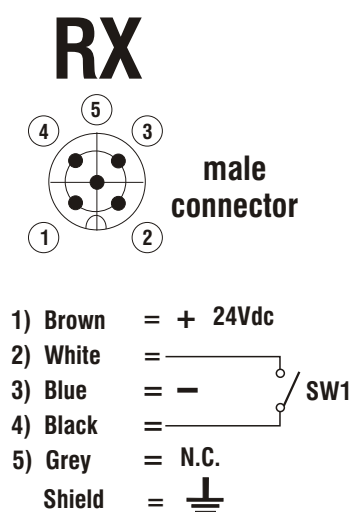
Light Curtain for the detection at infrared rays for the control - automation - objects presence control on areas - object passage detection on a conveyor - pieces counting - etc ..

Start/Restart : automatic restart of the logic state of the device after an intervention and at its powering on. It is supplied in series with a connector output M12 female 5poles to wire driving and with orientable support brackets (SMO)

PROTECTED AREAS HEIGHT

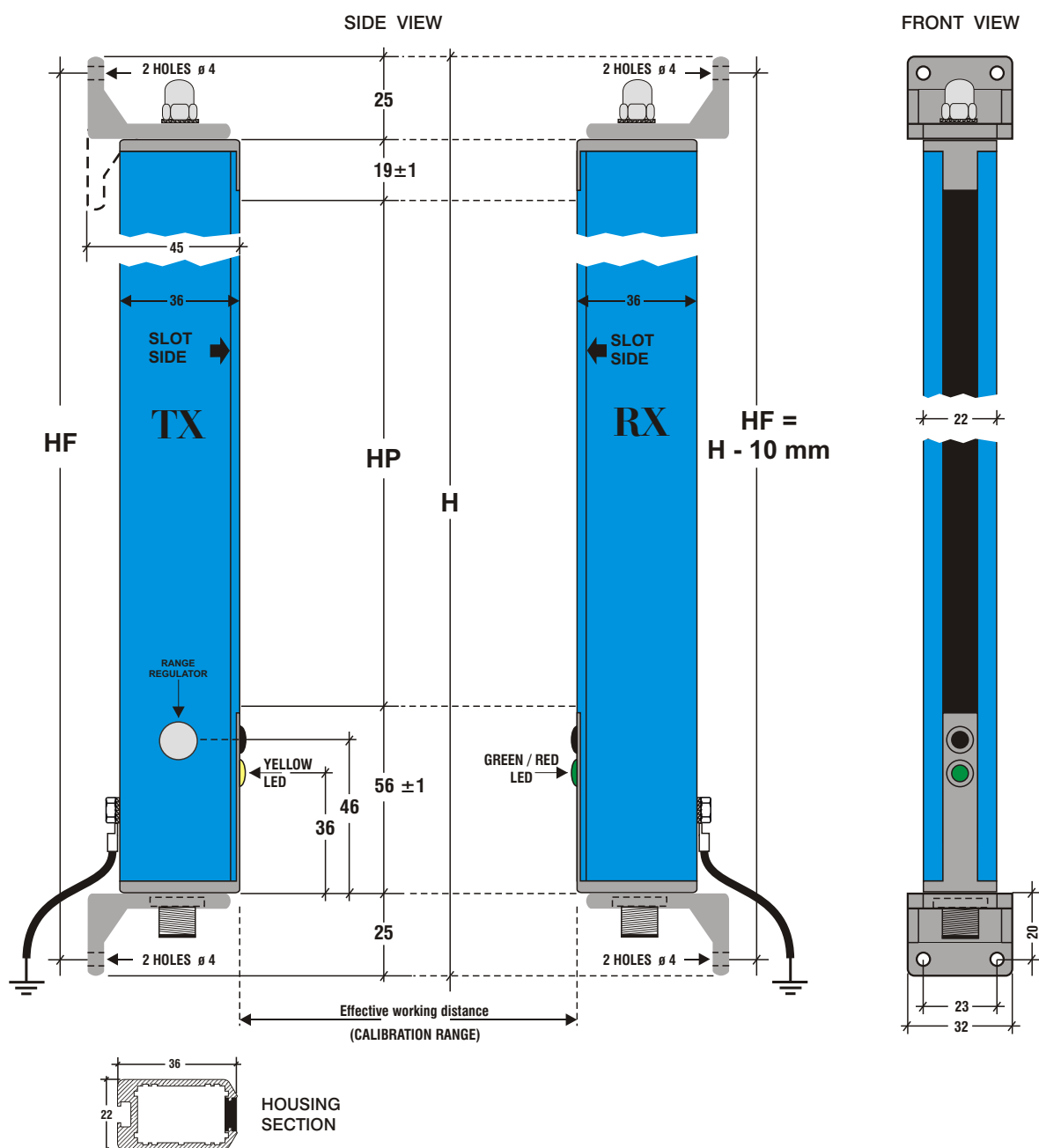
Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
FOX - P120	240	365	315	12	2x2
FOX - P120	480	605	555	14	3x3
FOX - P120	720	845	795	16	4x4
FOX - P120	960	1085	1035	18	5x5
FOX - P120	1200	1325	1275	20	6x6
FOX - P120	1440	1565	1515	22	7x7
FOX - P120	1680	1805	1755	24	8x8
FOX - P120	1920	2045	1995	26	9x9

Applications	PRESENCE - DETECTION
Power Supply	24Vdc \pm 10%
Absorption TX Unit	80 mA max
Absorption RX Unit	70 mA max
Output	1 switch SW1 (ON/OFF) free from potential 0,3 Adc/ac @ 24 Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit - Green Led = Curtain free - Red Led = Curtain occluded
Housing	Polished aluminium BLU RAL 5015
Housing Section	22 x 36 mm
Protection Degree	IP54 (option IP67 - IP69K)
Working Temperature	0 / +55 °C
RX Connection	Connector M12 female 5 poles to wire driving included in the supply
TX Connection	Connector M12 female 5 poles to wire driving included in the supply
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

CONNECTION ELECTRIC DIAGRAM


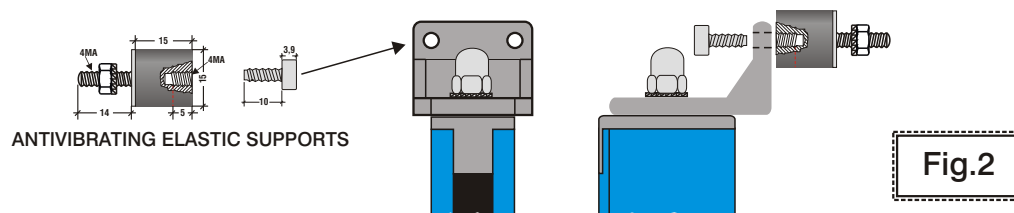
VERSION MOUNTING SOLUTION "SMO" (STANDARD)

Fig.1



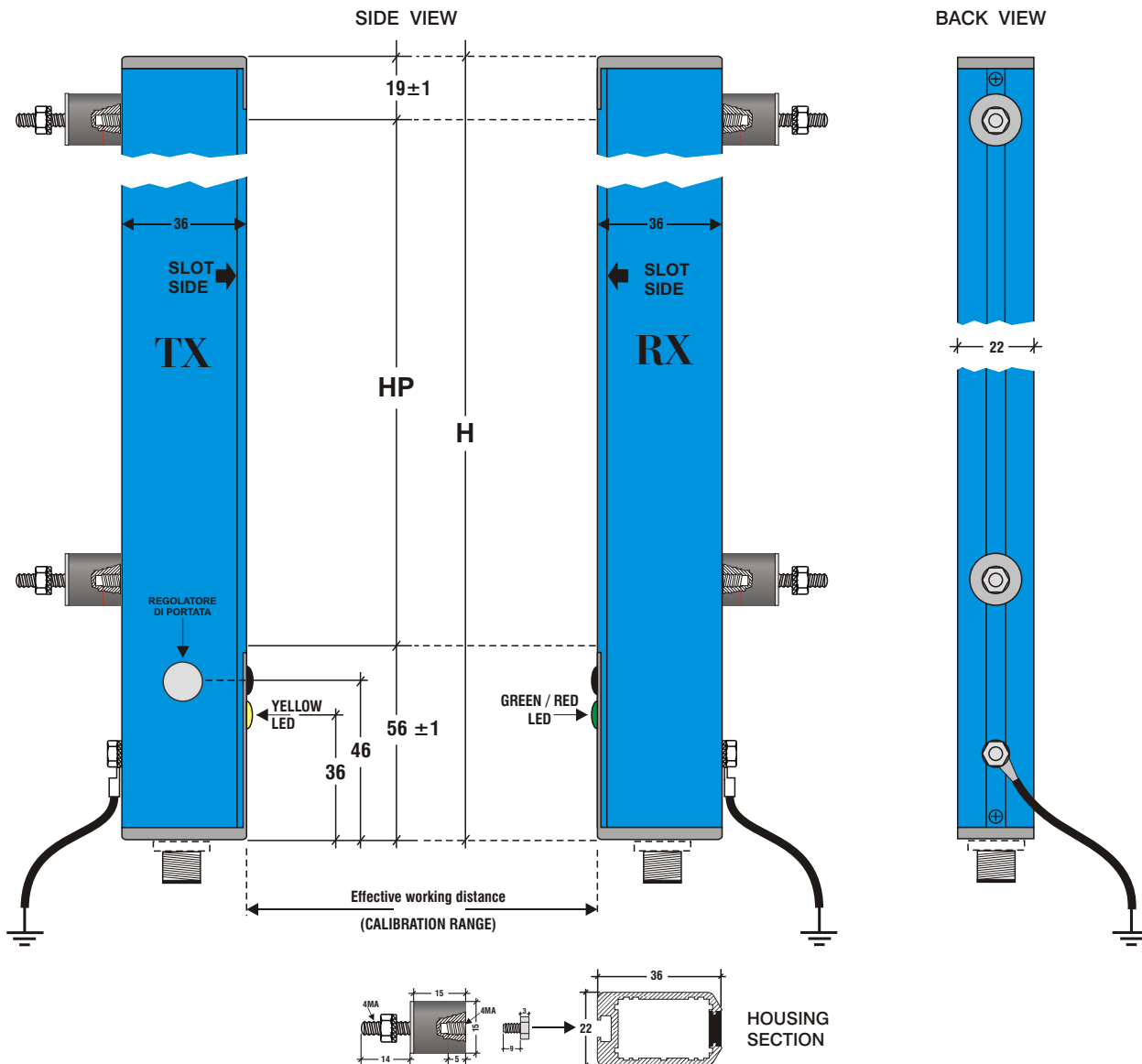
KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.



VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)

Fig.3

**Note :**

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H, are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
KIT - 8A	Kit of N°. 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SEA	2	SPV100	9
CB60 IP67	3	SPV100 PLUS	10
CB60 IP69K	4	KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
FOX - P120	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	2 3 4	9 10 14

Example :

FOX - P120 - 720 - 1000 - NR +

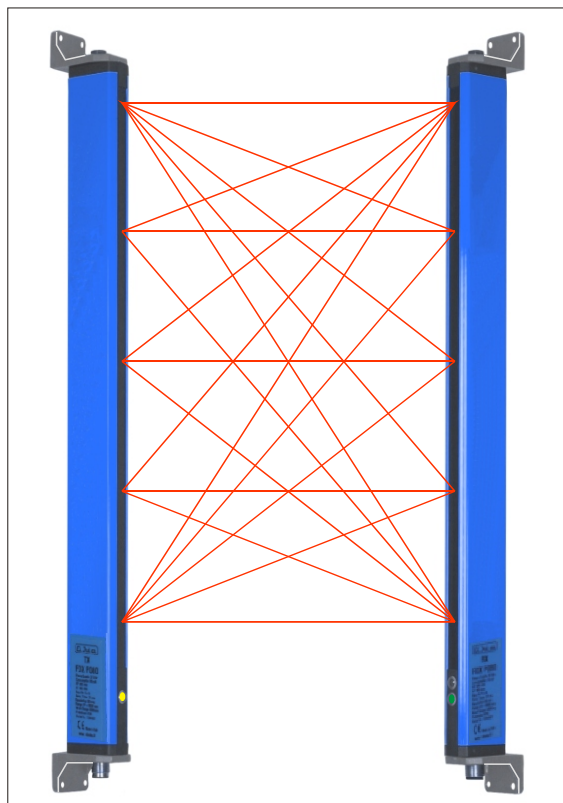
2	-
---	---

 +

-	-	14
---	---	----

FOX P160

Light Curtain Presence - Detection



Resolution 160 mm

Protected Height 320 ÷ 1920 mm

Range HP ÷ 30 metri

Output 1 switch - ON/OFF

Directives 2014/30/EC - 2014/35/EC

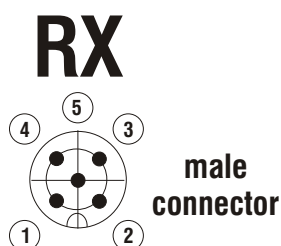
Light Curtain for the detection at infrared rays for the control - automation - objects presence control on areas - object passage detection on a conveyor - pieces counting - etc ..

Start/Restart : automatic restart of the logic state of the device after an intervention and at its powering on. It is supplied in series with a connector output M12 female 5poles to wire driving and with orientable support brackets (SMO)

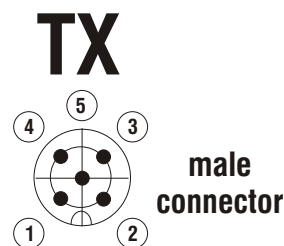
PROTECTED AREAS HEIGHT

Product Code	Protected Height mm HP	Total Height mm H / SMO	Total Height mm H / SEA	Response time ms	Number of controlled rays
FOX - P160	320	445	395	12	2x2
FOX - P160	640	765	715	14	3x3
FOX - P160	960	1085	1035	16	4x4
FOX - P160	1280	1405	1355	18	5x5
FOX - P160	1600	1725	1675	20	6x6
FOX - P160	1920	2045	1995	22	7x7

Applications	PRESENCE - DETECTION
Power Supply	24Vdc \pm 10%
Absorption TX Unit	80 mA max
Absorption RX Unit	70 mA max
Output	1 switch SW1 (ON/OFF) free from potential 0,3 Adc/ac @ 24 Vdc/ac
Output Protection	Short circuit and overcharge through self restoring fuses. After an overcharge or shortcircuit it is necessary to power off and wait some seconds before the normal working restart
LED Signallings	TX Unit - Yellow Led = Power Supply RX Unit - Green Led = Curtain free - Red Led = Curtain occluded
Housing	Polished aluminium BLU RAL 5015
Housing Section	22 x 36 mm
Protection Degree	IP54 (option IP67 - IP69K)
Working Temperature	0 / +55 °C
RX Connection	Connector M12 female 5 poles to wire driving included in the supply
TX Connection	Connector M12 female 5 poles to wire driving included in the supply
Fixing	SMO - orientable support brackets (standard version) SEA - antivibrating elastic supports (optional)

CONNECTION ELECTRIC DIAGRAM


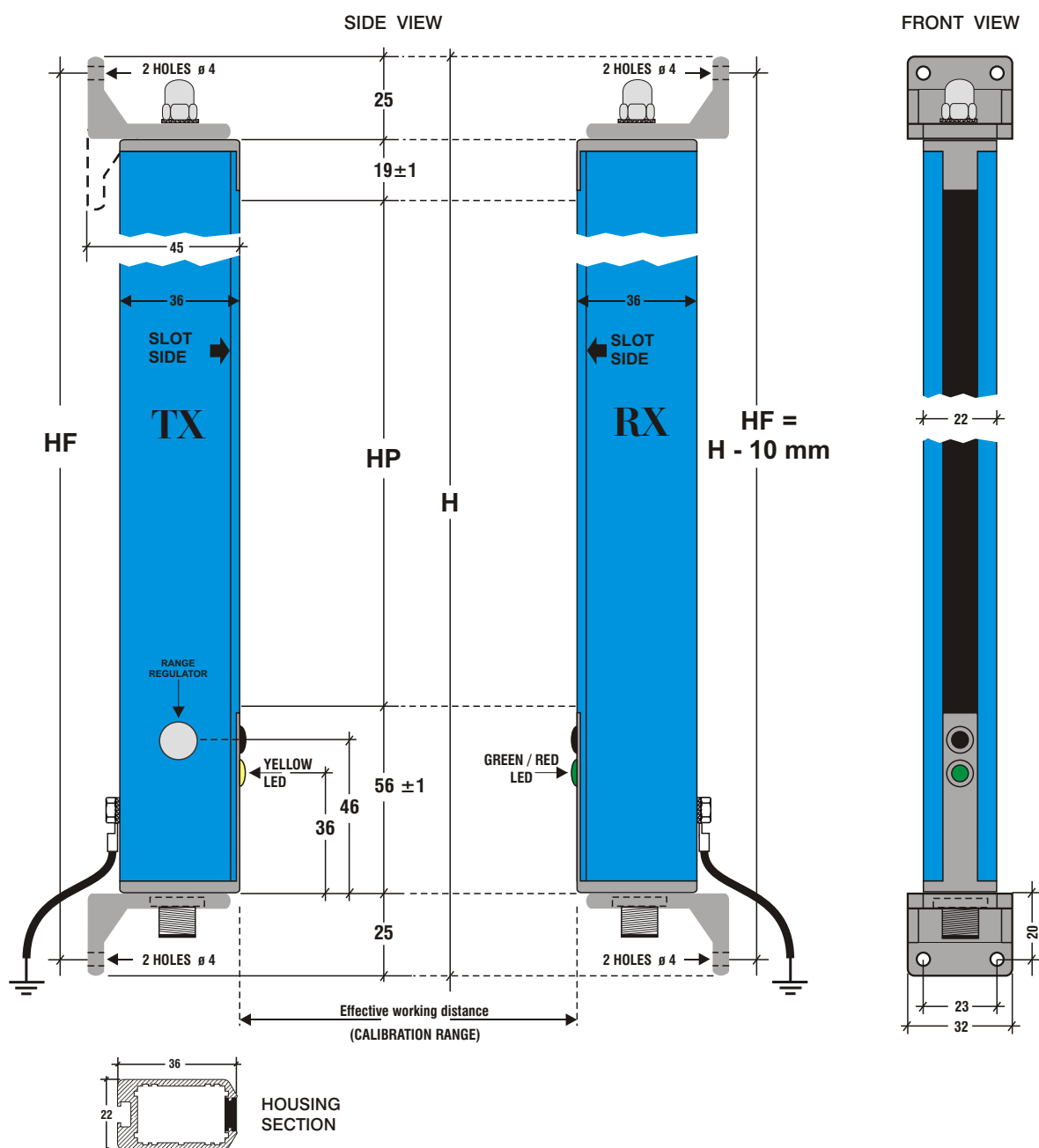
- 1) Brown = + 24Vdc
- 2) White =
- 3) Blue = -
- 4) Black =
- 5) Grey = N.C.
- Shield =



- 1) Brown = + 24Vdc
- 2) White = N.C.
- 3) Blue = -
- 4) Black = N.C.
- 5) Grey = N.C.
- Shield =

VERSION MOUNTING SOLUTION "SMO" (STANDARD)

Fig.1



KIT - 8A (accessory)

Separately you can purchase KIT - 8A (see ACCESSORIES section) consists of a box of N° 8 antivibrating elastic supports, inclusive of the respective screws, to apply to SMO brackets (upper/lower) as shown in Fig.2.

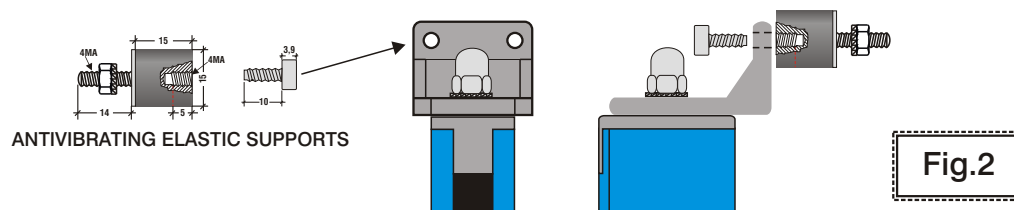
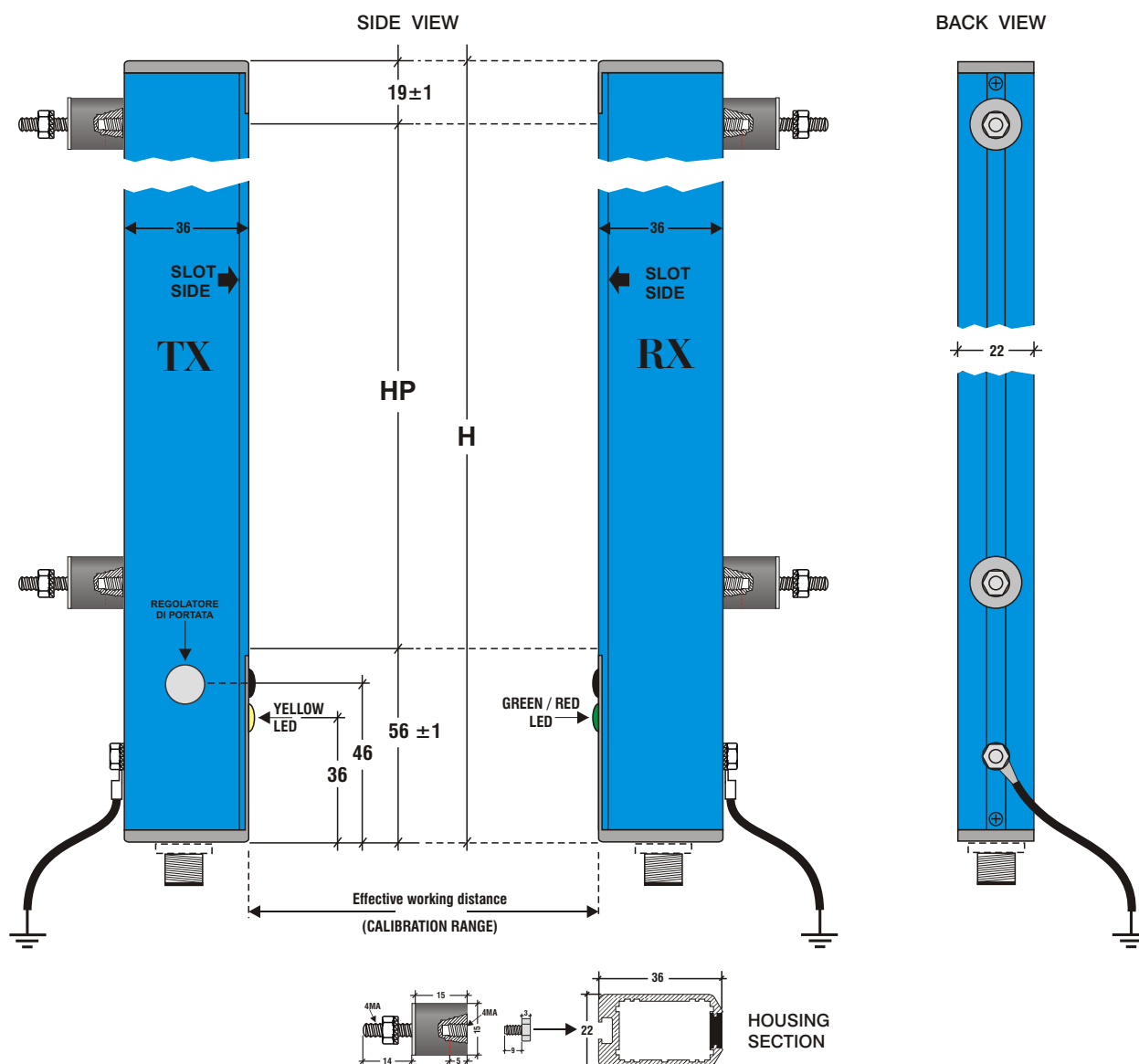


Fig.3

VERSION MOUNTING SOLUTION "SEA" (OPTIONAL)



Note :

With the SEA fixing solution, a number of anti-vibration elastic supports proportional to the total height H , are inserted at the factory in the rear rail of the light curtain, as shown in Fig.3.

The antivibrating elastic supports can slide freely in the rear guide so as to facilitate the final mounting at the desired points.

This solution allows to reduce the total dimensions while maintaining the ability to meet the mechanical vibrations.

Additional antivibrating elastic supports can be requested by the customer when ordering.

OPTIONS

SEA	Antivibrating elastic supports (see Fig.3)
CB60 IP67	IP67 protection in transparent cylindric
CB60 IP69K	IP69K protection in transparent cylindric

ACCESSORIES

SPV100	Mirror column for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100 the HU of the mirror)
SPV100 PLUS	Mirror column UNBREAKABLE for enclosures (depending on the HP protected of the light curtain, check on the respective technical sheet SPV100PLUS the HU of the mirror)
KIT - 8A	Kit of N° 8 antivibrating elastic supports including the respective screws to be applied to SMO brackets (upper / lower) as shown in Fig.2

HOW TO ORDER THE OPTIONS and THE ACCESSORIES

SEA	2	SPV100	9
CB60 IP67	3	SPV100 PLUS	10
CB60 IP69K	4	KIT - 8A	14

INSERT NUMBER
CORRESPONDING
IN ORDER
LIGHT CURTAIN

HOW TO ORDER THE LIGHT CURTAIN

Product Code	HP protected height	Distance effective working	Distance max working	OPTIONS	ACCESSORIES
FOX - P160	-	-	-	-	-
TRANSMITTER + RECEIVER	SEE TABLE page 1	Indicate the distance effective working between the unit TX and RX in mm	Maximum range between TX and RX NR = HP ... 6 meters MR = 6 ... 16 meters HR = 16 ... 30 meters	2 3 4	9 10 14

Example :

FOX - P160 - 960 - 1000 - NR +

2	-
---	---

 +

-	-	14
---	---	----

NOTE

Nel 1956 l'Ing. Ottorino Barbuti fonda la Elettronica Industriale con sede in Lissone. Tra le invenzioni dell'Ing. Barbuti elenchiamo le più importanti :

- Ripetitori di canali televisivi (SVIZZERA, MONTECARLO, ecc...)
- Convertitori di canale
- Videocitofono
- Rubinetti elettronici no-touch

Nel 1986 trasforma l'azienda in due unità, la ELIOTECNICA INDUSTRIALE (che si occupa di pannelli solari) e la EL.IND.CO. In quest'ultima inizia lo sviluppo dei prodotti per la automazione industriale e in modo particolare la progettazione di una vasta gamma di modelli di **"barriere immateriali a raggi incrociati"** per scopo antiintrusione (banche, aree self service, ecc...) e per scopi antinfortunistici (bordo macchina). L'impegno presso i Comitati Tecnici per la stesura delle normative inerenti ha portato alla realizzazione di un prodotto ad altissimo contenuto tecnologico e sempre allo stato dell'arte.

L'attenzione al Cliente ed il Know how tecnico rendono ancora oggi la EL.IND.CO fornitore di soluzioni per tutto il mondo della automazione proseguendo in tale campo con realizzazioni sempre più sofisticate e innovative.

In 1956 Mr. Eng. Ottorino Barbuti established the company Elettronica Industriale in Lissone. Among his most important inventions are :

- *Repeaters of TV channels (SWITZERLAND, MONTECARLO, etc...)*
- *Channel converters*
- *Video entry phone*
- *Water "no touch" faucets*

In 1986 he splitted the business into two companies, ELIOTECNICA INDUSTRIALE (producing solar panels) and EL.IND.CO.

This one develops products for industrial automation and in particular the project of a wide range of models of "immaterial light curtains at infrared crossed self-synchrone rays" for anti-intrusion (banks, self-service areas, etc...) and for accident protection on machines. The engagement with the Technical Committee for the drawing up of the concerning Standards brought to the realisation of a high-technology product and always at the state of the art.

The orientation to Customer and the technical know-how make still nowadays EL.IND.CO. a supplier of solutions for the whole automation field with always more sophisticated and innovative products.



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