

# SG2 BASE / SG2 EXTENDED SG4 BASE



*High reliability*  
*Easy installation and alignment*  
*Cost effective*

- Finger, hand, arm detection with basic functions
- 90 mm version for presence detection
- Up to 19 m operating distance
- Compact dimensions (32.3 x 36.9 mm section)
- Anti-interference coding
- IP65 Protection; IP69K with optional tube
- Unshielded cables
- Rotating and anti-vibration brackets



SAFETY

## APPLICATIONS

- Automatic machines: cutting, packaging, material handling and storing.
- Automatic and semi-automatic assembling lines;
- Milling, lathe and shearing machines
- Bending and metal-working machines



## INDUSTRIES

*Food & Beverage, Textile, Wood, Ceramic, Metal, Automotive, Electronics.*

|        | FINGER | HAND | ARM | BODY |
|--------|--------|------|-----|------|
| TYPE 2 |        | ▪    | ▪   |      |
| TYPE 4 | ▪      | ▪    |     |      |

**SG2-30-015-00-E**

| TYPE |        |
|------|--------|
| 2    | Type 2 |
| 4    | Type 4 |

| RESOLUTION |                          |
|------------|--------------------------|
| 14         | Finger: 14 mm            |
| 30         | Hand: 30 mm              |
| 50         | Arm: 50 mm (only Type 2) |
| 90         | Arm: 90 mm (only Type 2) |

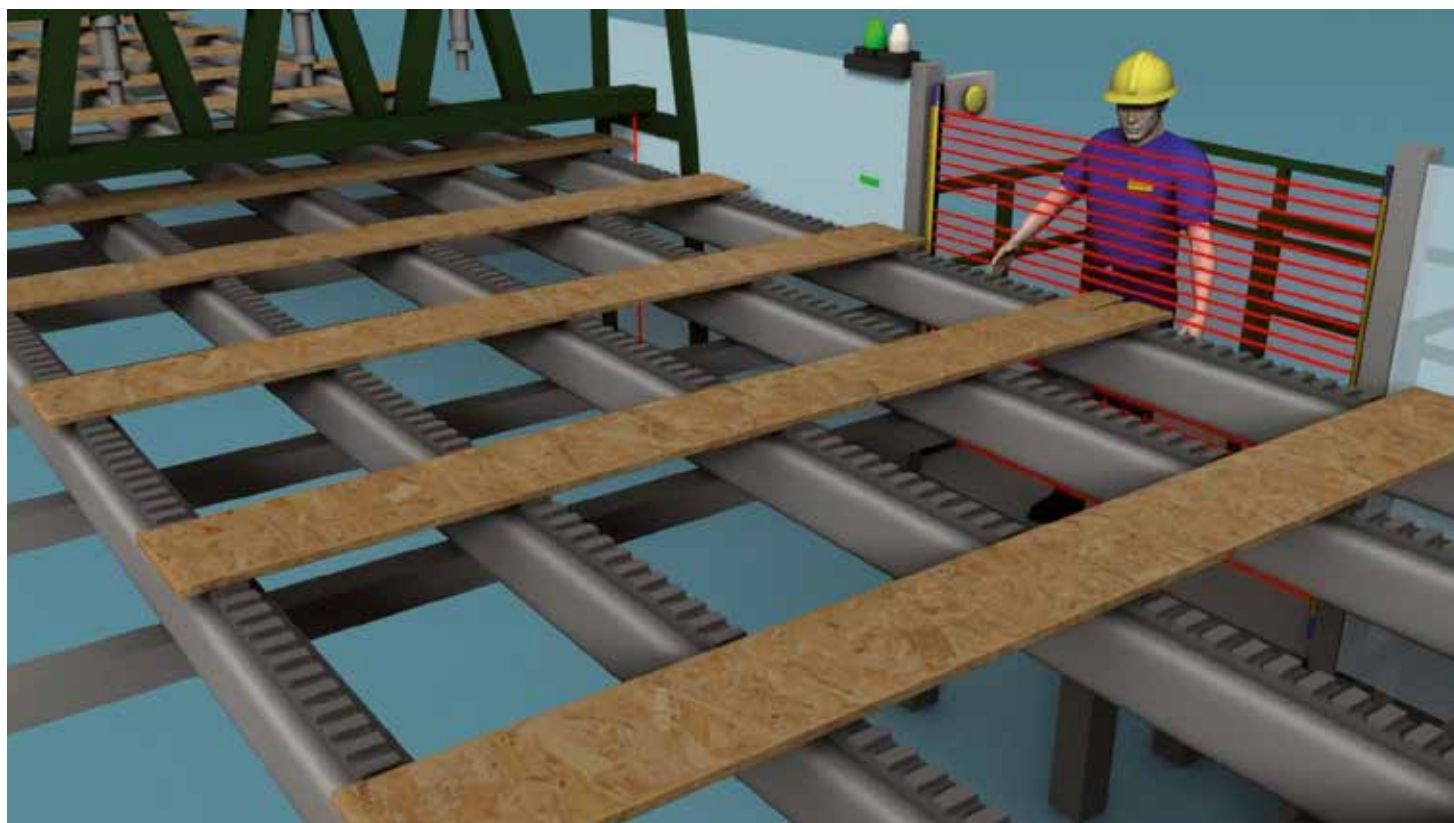
| MONITORED HEIGHT |        |
|------------------|--------|
| 15               | 150 mm |
| 30               | 300 mm |
| ...              | ...    |
| 180              | 1800mm |

| VERSION |                   |
|---------|-------------------|
| E       | Type4, EDM, Coded |
| E-C     | Type2, EDM, Coded |
| X       | Basic Function    |

## TECHNICAL DATA

|                                   | SG2 BASE<br>[SG2-xx-xxx-00-X]      | SG2 EXTENDED<br>[SG2-xx-xxx-00-E-C] | SG4 BASE<br>[SG4-xx-xxx-00-X]                                    | SG4 BASE<br>[SG4-xx-xxx-00-E] |
|-----------------------------------|------------------------------------|-------------------------------------|------------------------------------------------------------------|-------------------------------|
| GENERAL DATA                      |                                    |                                     |                                                                  |                               |
| Type (EN61496-1)                  | 2                                  |                                     | 4                                                                |                               |
| PL (EN ISO 13849-1)               | c                                  |                                     | e                                                                |                               |
| SIL (IEC 61508)                   | 1                                  |                                     | 3                                                                |                               |
| Resolution                        | 30 - 50 - 90 mm                    |                                     | 14 - 30 mm                                                       |                               |
| Protected height                  | 150 ...1800 mm (with 150 mm steps) |                                     |                                                                  |                               |
| Operating distance                | 0.2 ...19 m                        |                                     | 0.2 ... 6 m (resolution 14 mm)<br>0.2 ...19 m (resolution 30 mm) |                               |
| ELECTRICAL DATA                   |                                    |                                     |                                                                  |                               |
| Power supply (Vdd)                | 24 Vdc ± 20                        |                                     |                                                                  |                               |
| Outputs                           | 2 PNP                              |                                     |                                                                  |                               |
| Output current                    | 0.5 A max / each output            |                                     |                                                                  |                               |
| Capacitive load                   | 2.2 uF @ 24Vdc max                 |                                     |                                                                  |                               |
| Response time*                    | 8 ... 24 ms                        |                                     | 9 ... 50 ms                                                      |                               |
| Cables length (for power supply)  | 50 m max                           |                                     |                                                                  |                               |
| MECHANICAL AND ENVIRONMENTAL DATA |                                    |                                     |                                                                  |                               |
| Operating temperature             | -10 ...+55 °C                      |                                     | 0 ...+55 °C                                                      |                               |
| Humidity                          | 15 ... 95 % (no condensation)      |                                     |                                                                  |                               |
| Mechanical protection             | IP 65 (EN 60529)                   |                                     |                                                                  |                               |
| FUNCTIONS                         |                                    |                                     |                                                                  |                               |
| Test Input                        | On Receiver                        | On Emitter                          | N/A                                                              | On Emitter                    |
| Restart                           | Automatic                          | Manual / Automatic                  | Automatic                                                        | Manual / Automatic            |
| EDM (External Device Monitoring)  | N/A                                | On Receiver                         | N/A                                                              | On Receiver                   |
| Selectable Operating Distance     | N/A                                | On Emitter                          | N/A                                                              |                               |

\* Response time is depending on height, for detailed informations refer to the Manual of the light curtain.



## CONNECTION

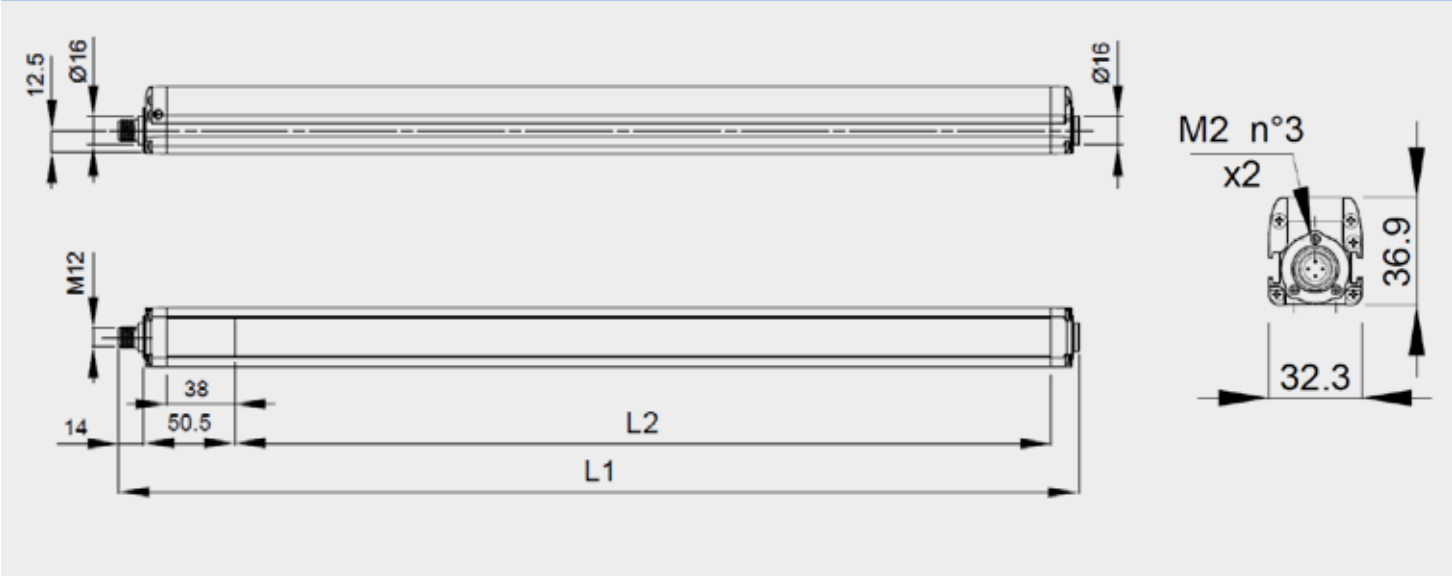
|          | SG2 BASE<br>[ SG2-XX-XXX-00-X ]       | SG4 BASE<br>[ SG4-XX-XXX-00-X ] |
|----------|---------------------------------------|---------------------------------|
| EMITTER  |                                       |                                 |
| RECEIVER |                                       |                                 |
|          | SG2 EXTENDED<br>[ SG2-XX-XXX-00-E-C ] | SG4 BASE<br>[ SG4-XX-XXX-00-E ] |
| EMITTER  |                                       |                                 |
| RECEIVER |                                       |                                 |

### NOTES

To set manual restart, connect Pin 8 (MAN/AUTO) with Pin 6 (OSSD2)

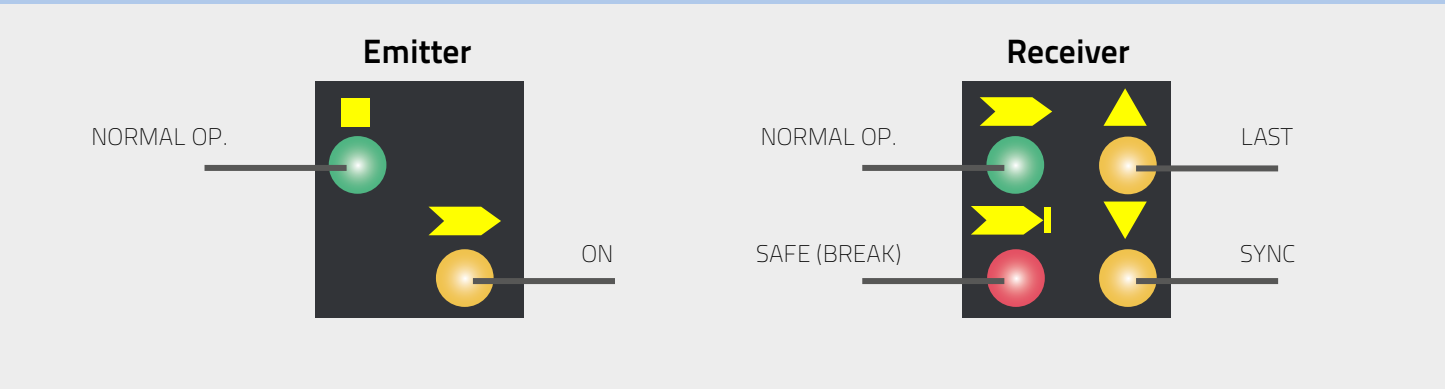
To deactivate EDM function, connect Rx Pin 3 to 24Vdc on Receiver

DIMENSIONS



| MODEL             | L1 (MM) | L2 (MM) |
|-------------------|---------|---------|
| SGx-yy-150-00-xxx | 233.3   | 153.3   |
| SGx-yy-030-00-xxx | 383.2   | 303.2   |
| SGx-yy-045-00-xxx | 533.2   | 453.3   |
| SGx-yy-060-00-xxx | 683.2   | 603.2   |
| SGx-yy-075-00-xxx | 833.2   | 753.3   |
| SGx-yy-090-00-xxx | 983.2   | 903.2   |
| SGx-yy-105-00-xxx | 1133.2  | 1053.2  |
| SGx-yy-120-00-xxx | 1283.3  | 1203.3  |
| SGx-yy-135-00-xxx | 1433.2  | 1353.2  |
| SGx-yy-150-00-xxx | 1583.3  | 1503.3  |
| SGx-yy-165-00-xxx | 1733.3  | 1653.3  |
| SGx-yy-180-00-xxx | 1883.3  | 1803.3  |

INDICATORS



# SG2 BASE / SG2 EXTENDED SG4 BASE



## MODEL SELECTION AND ORDER INFORMATION

|                          | SG2 BASE<br>[ SG2-XX-XXX-00-X ] | ORDER CODE | SG2 EXTENDED<br>[ SG2-XX-XXX-00-E-C ] | ORDER CODE | SG4-XX-XXX-00-X | ORDER CODE | SG4 BASE<br>[ SG4-XX-XXX-00-E ] | ORDER CODE |
|--------------------------|---------------------------------|------------|---------------------------------------|------------|-----------------|------------|---------------------------------|------------|
| FINGER PROTECTION        | ---                             | ---        | ---                                   | ---        | SG4-14-015-00-X | 957901460  | SG4-14-015-00-E                 | 957901000  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-030-00-X | 957901470  | SG4-14-030-00-E                 | 957901010  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-045-00-X | 957901480  | SG4-14-045-00-E                 | 957901020  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-060-00-X | 957901490  | SG4-14-060-00-E                 | 957901030  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-075-00-X | 957901500  | SG4-14-075-00-E                 | 957901040  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-090-00-X | 957901510  | SG4-14-090-00-E                 | 957901050  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-105-00-X | 957901520  | SG4-14-105-00-E                 | 957901060  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-120-00-X | 957901530  | SG4-14-120-00-E                 | 957901070  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-135-00-X | 957901540  | SG4-14-135-00-E                 | 957901080  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-150-00-X | 957901550  | SG4-14-150-00-E                 | 957901090  |
| HAND PROTECTION          | ---                             | ---        | ---                                   | ---        | SG4-14-165-00-X | 957901560  | SG4-14-165-00-E                 | 957901100  |
|                          | ---                             | ---        | ---                                   | ---        | SG4-14-180-00-X | 957901570  | SG4-14-180-00-E                 | 957901110  |
|                          | SG2-30-015-00-X                 | 957801000  | SG2-30-015-00-E-C                     | 957801340  | SG4-30-015-00-X | 957901690  | SG4-30-015-00-E                 | 957901120  |
|                          | SG2-30-030-00-X                 | 957801010  | SG2-30-030-00-E-C                     | 957801350  | SG4-30-030-00-X | 957901580  | SG4-30-030-00-E                 | 957901130  |
|                          | SG2-30-045-00-X                 | 957801020  | SG2-30-045-00-E-C                     | 957801360  | SG4-30-045-00-X | 957901590  | SG4-30-045-00-E                 | 957901140  |
|                          | SG2-30-060-00-X                 | 957801030  | SG2-30-060-00-E-C                     | 957801370  | SG4-30-060-00-X | 957901600  | SG4-30-060-00-E                 | 957901150  |
|                          | SG2-30-075-00-X                 | 957801040  | SG2-30-075-00-E-C                     | 957801380  | SG4-30-075-00-X | 957901610  | SG4-30-075-00-E                 | 957901160  |
|                          | SG2-30-090-00-X                 | 957801050  | SG2-30-090-00-E-C                     | 957801390  | SG4-30-090-00-X | 957901620  | SG4-30-090-00-E                 | 957901170  |
|                          | SG2-30-105-00-X                 | 957801060  | SG2-30-105-00-E-C                     | 957801400  | SG4-30-105-00-X | 957901630  | SG4-30-105-00-E                 | 957901180  |
|                          | SG2-30-120-00-X                 | 957801070  | SG2-30-120-00-E-C                     | 957801410  | SG4-30-120-00-X | 957901640  | SG4-30-120-00-E                 | 957901190  |
| PRESENCE / ARM DETECTION | SG2-30-135-00-X                 | 957801080  | SG2-30-135-00-E-C                     | 957801420  | SG4-30-135-00-X | 957901650  | SG4-30-135-00-E                 | 957901200  |
|                          | SG2-30-150-00-X                 | 957801090  | SG2-30-150-00-E-C                     | 957801430  | SG4-30-150-00-X | 957901660  | SG4-30-150-00-E                 | 957901210  |
|                          | SG2-30-165-00-X                 | 957801100  | SG2-30-165-00-E-C                     | 957801440  | SG4-30-165-00-X | 957901670  | SG4-30-165-00-E                 | 957901220  |
|                          | SG2-30-180-00-X                 | 957801110  | SG2-30-180-00-E-C                     | 957801450  | SG4-30-180-00-X | 957901680  | SG4-30-180-00-E                 | 957901230  |
|                          | SG2-50-030-00-X                 | 957801120  | SG2-50-030-00-E-C                     | 957801460  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-045-00-X                 | 957801130  | SG2-50-045-00-E-C                     | 957801470  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-060-00-X                 | 957801140  | SG2-50-060-00-E-C                     | 957801480  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-075-00-X                 | 957801150  | SG2-50-075-00-E-C                     | 957801490  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-090-00-X                 | 957801160  | SG2-50-090-00-E-C                     | 957801500  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-105-00-X                 | 957801170  | SG2-50-105-00-E-C                     | 957801510  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-120-00-X                 | 957801180  | SG2-50-120-00-E-C                     | 957801520  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-135-00-X                 | 957801190  | SG2-50-135-00-E-C                     | 957801530  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-150-00-X                 | 957801200  | SG2-50-150-00-E-C                     | 957801540  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-165-00-X                 | 957801210  | SG2-50-165-00-E-C                     | 957801550  | ---             | ---        | ---                             | ---        |
|                          | SG2-50-180-00-X                 | 957801220  | SG2-50-180-00-E-C                     | 957801560  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-030-00-X                 | 957801230  | SG2-90-030-00-E-C                     | 957801570  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-045-00-X                 | 957801240  | SG2-90-045-00-E-C                     | 957801580  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-060-00-X                 | 957801250  | SG2-90-060-00-E-C                     | 957801590  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-075-00-X                 | 957801260  | SG2-90-075-00-E-C                     | 957801600  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-090-00-X                 | 957801270  | SG2-90-090-00-E-C                     | 957801610  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-105-00-X                 | 957801280  | SG2-90-105-00-E-C                     | 957801620  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-120-00-X                 | 957801290  | SG2-90-120-00-E-C                     | 957801630  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-135-00-X                 | 957801300  | SG2-90-135-00-E-C                     | 957801640  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-150-00-X                 | 957801310  | SG2-90-150-00-E-C                     | 957801650  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-165-00-X                 | 957801320  | SG2-90-165-00-E-C                     | 957801660  | ---             | ---        | ---                             | ---        |
|                          | SG2-90-180-00-X                 | 957801330  | SG2-90-180-00-E-C                     | 957801670  | ---             | ---        | ---                             | ---        |

## CABLES

|                                                                                                                                    | POLES | TRANSMITTER CABLE | LENGTH (M) | ORDER CODE |
|------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------|------------|------------|
| SG2 BASE<br>[SG2-xx-xxx-00-X]<br><br>SG2 EXTENDED<br>[SG2-xx-xxx-00-E-C]<br><br>SG4 BASE<br>[SG4-xx-xxx-00-X]<br>[SG4-xx-xxx-00-E] | 4     | CS-A1-02-U-03     | 3          | 95ASE1120  |
|                                                                                                                                    |       | CS-A1-02-U-05     | 5          | 95ASE1130  |
|                                                                                                                                    |       | CS-A1-02-U-10     | 10         | 95ASE1140  |
|                                                                                                                                    |       | CS-A1-02-U-15     | 15         | 95ASE1150  |
|                                                                                                                                    |       | CS-A1-02-U-25     | 25         | 95ASE1160  |
|                                                                                                                                    |       | RECEIVER CABLE    | LENGTH (M) | ORDER CODE |
| SG4 BASE<br>[SG4-xx-xxx-00-X]                                                                                                      | 4     | CS-A1-02-U-03     | 3          | 95ASE1120  |
|                                                                                                                                    |       | CS-A1-02-U-05     | 5          | 95ASE1130  |
|                                                                                                                                    |       | CS-A1-02-U-10     | 10         | 95ASE1140  |
|                                                                                                                                    |       | CS-A1-02-U-15     | 15         | 95ASE1150  |
| SG2 BASE<br>[SG2-xx-xxx-00-X]                                                                                                      | 5     | CS-A1-03-U-03     | 3          | 95ASE1170  |
|                                                                                                                                    |       | CS-A1-03-U-05     | 5          | 95ASE1180  |
|                                                                                                                                    |       | CS-A1-03-U-10     | 10         | 95ASE1190  |
|                                                                                                                                    |       | CS-A1-03-U-15     | 15         | 95ASE1200  |
|                                                                                                                                    |       | CS-A1-03-U-25     | 25         | 95ASE1210  |
| SG2 EXTENDED<br>[SG2-xx-xxx-00-E-C]<br><br>SG4 BASE<br>[SG4-xx-xxx-00-E]                                                           | 8     | CS-A1-06-U-03     | 3          | 95ASE1220  |
|                                                                                                                                    |       | CS-A1-06-U-05     | 5          | 95ASE1230  |
|                                                                                                                                    |       | CS-A1-06-U-10     | 10         | 95ASE1240  |
|                                                                                                                                    |       | CS-A1-06-U-15     | 15         | 95ASE1250  |
|                                                                                                                                    |       | CS-A1-06-U-25     | 25         | 95ASE1260  |

### NOTE

All cables have axial connectors

## ACCESSORIES

|                                                         | SG2 BASE<br>[ SG2-xx-xxx-00-X ]            |                  | SG2 EXTENDED<br>[ SG2-xx-xxx-00-E-C ] |       | SG4 BASE<br>[ SG4-xx-xxx-00-X ] |  | SG4 BASE<br>[ SG4-xx-xxx-00-E ] |  |
|---------------------------------------------------------|--------------------------------------------|------------------|---------------------------------------|-------|---------------------------------|--|---------------------------------|--|
|                                                         | BRACKETS                                   |                  |                                       |       |                                 |  |                                 |  |
| Standard angled brackets                                | ST-KSTD (outfit for SG2 Base and SG4 Base) |                  |                                       |       |                                 |  |                                 |  |
| Rotating brackets                                       | ST-K4ROT (outfit for SG2 Extended)         |                  |                                       |       |                                 |  |                                 |  |
| Antivibration support (4 pcs / 6 pcs)*                  | ST-K4AV<br>ST-K6AV                         |                  |                                       |       |                                 |  |                                 |  |
| Plastic brackets (4 pcs / 6 pcs)*                       | ST-KP4MP<br>ST-KP6MP                       |                  |                                       |       |                                 |  |                                 |  |
|                                                         | PROTECTION TUBES AND STANDS                |                  |                                       |       |                                 |  |                                 |  |
| IP67/IP69K Tubes                                        | SG-IP69K series                            |                  |                                       |       |                                 |  |                                 |  |
| Protective Stands                                       | SG-PSB series                              |                  |                                       |       |                                 |  |                                 |  |
| Stand Plate for SG-PSB                                  | SG-P                                       |                  |                                       |       |                                 |  |                                 |  |
| Protective Stands Mounting Brackets<br>(4 pcs / 6 pcs)* | ST-PS4-SG-SE<br>ST-PS6-SG-SE               |                  |                                       |       |                                 |  |                                 |  |
| Floor Columns                                           | SE-S Series                                |                  |                                       |       |                                 |  |                                 |  |
|                                                         | MIRRORS                                    |                  |                                       |       |                                 |  |                                 |  |
| Deviating Mirrors                                       | SG-DM Series                               |                  |                                       |       |                                 |  |                                 |  |
| Deviating Mirrors mounting kit for SG-PSB               | ST-PS-DM                                   |                  |                                       |       |                                 |  |                                 |  |
| Mirror Mounting Bracket                                 | ST-DM                                      |                  |                                       |       |                                 |  |                                 |  |
|                                                         | SAFETY UNITS                               |                  |                                       |       |                                 |  |                                 |  |
| Safety Unit                                             | SE-SR2                                     |                  |                                       |       |                                 |  |                                 |  |
| EDM Relay Box**                                         | -----                                      | CS ME-03VU24-Y14 |                                       | ----- | CS ME-03VU24-Y14                |  |                                 |  |
| Safety control unit for single beams and SLC            | SG-BWS-T4-MT                               |                  |                                       |       |                                 |  |                                 |  |
|                                                         | ALIGNMENT TOOL                             |                  |                                       |       |                                 |  |                                 |  |
| LASER Pointer                                           | SG-LP                                      |                  |                                       |       |                                 |  |                                 |  |

### NOTES

\* Use 6 brackets for light curtains with length  $\geq 1200$  mm

\*\* When using EDM Relay Box or Muting connection box, connect EDM input, and be sure EDM function is active on the safety light curtain

For accessories part number, please refer to **Safety Reference Guide**