RIELLO ELETTRONICA

gamma system

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SAFETY DEVICES

SENSITIVE EDGES

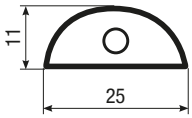
The sensitive edge is a safety component used to avoid crashing or cutting risks by sliding doors, automatic moving guards, automated moving guards, electrical gates, etc.
The edges feature a PVC coating with an internal sensor, consisting of 2 conductive blades, separated by a non-conductive part. When the edge is pressed, the blades come into contact and make the circuit.
The change in state of the internal sensor (NO to NC) is processed by the “control unit” that emits a stop signal to the machine thereby removing the hazardous situation.

PRE-ASSEMBLED
EDGES

Standard version; length upon customer's request with **pre-assembled sensor and aluminium support.**

Models available: Type BO, Type B1N, Type B2N.

EDGE TYPE "BO"



Profile made of black EPDM. It ensures maximum sensitivity to activation.
Particularly suitable as an emergency button or as an alternative to emergency wire micro switching.
Supplied with both side adhesive tape for wall fixing.
The edges of the profile are sealed with polyurethane resin to ensure better watertight property.
For the edge type "BO", the outlet cable can only be on the head side.

Different lengths of the cable available upon request (please indicate when ordering).

N.B. The product cannot be used as safety function

HOW TO ORDER AN EDGE TYPE "BO"

Code

GSBO = Gamma System Edge "BO"

Cavo = **S**: standard, 3 m long
1: special version

G	S	B	O	L	_	_	_	_	C	_	U	T	X	X	X	X

L = Length (mm)

UT = Head outlet cable

XX = standard version
X1 = special version

CABLE

S: *CS - Standard cable* **4x0.35 mm²** FROR 300/500, 3 m in length
1: For lengths other than the standard one, please indicate the cable length, e.g. 10 m = **C10**.

Example 1: edge type "BO" 1000 mm in length with standard cable, e.g. 10 m = C10.

G	S	B	O	L	1	0	0	0	C	S	U	T	X	X	X	X

(profile Type "A") *sensitive area 910x910 mm*

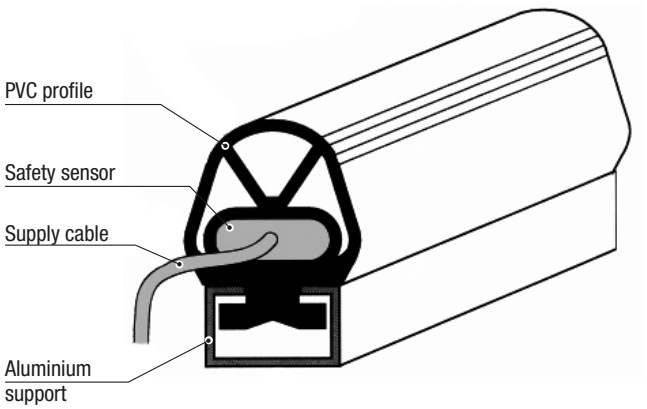
Example 2: edge type "BO" 1000 mm in length with cable 10 m in length and with 4-pole, M8 male connector.

G	S	B	O	L	1	0	0	0	C	1	0	U	T	X	X	1

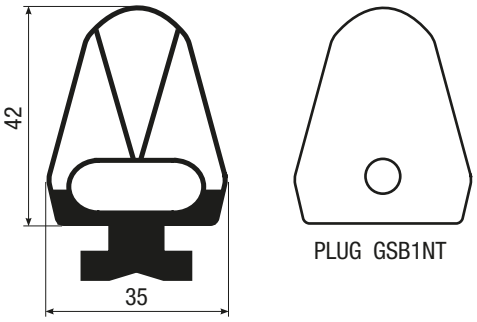
EDGE TYPE “B1N” AND “B2N”

Profile made of black PVC for edges type B1N and B2N. The edges feature a sensor on the bottom part of the profile so to ensure sensitivity with front side operations, as well as with a max. angle of ±45°.
The ends of the profile are sealed with polyurethane resin to ensure better watertight property.

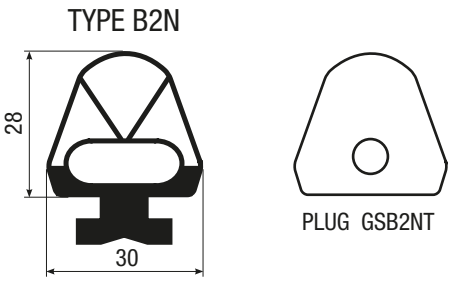
Different lengths of the outlet cable available upon request (please indicate when ordering).



TYPE B1N

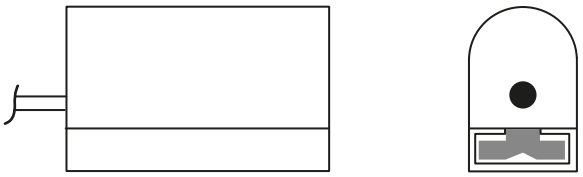


TYPE B2N

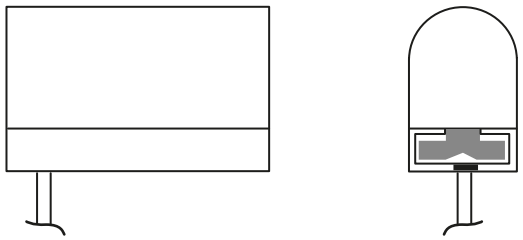


SUPPLY CABLE OUTLET

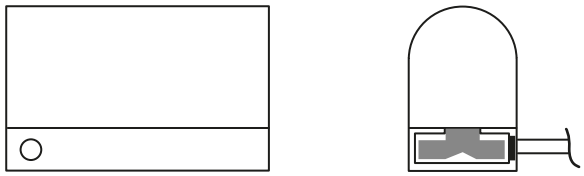
“UT” | Head outlet (standard)



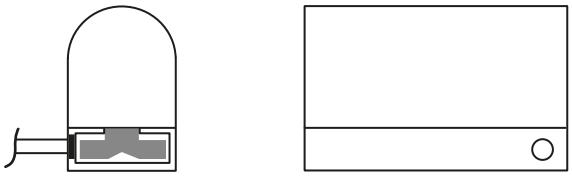
“UI” | Bottom outlet



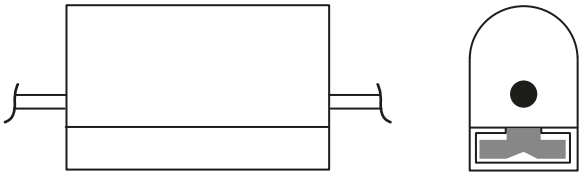
“ULDX” | Right side outlet



“ULSX” | Left side outlet



“CSCS” | Double outlet of cable

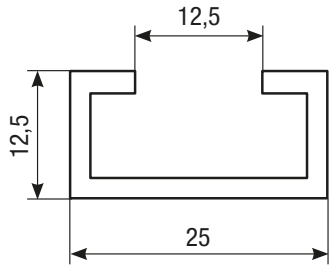


INFORMATION REQUIRED FOR COMPLETING THE SENSITIVE EDGE

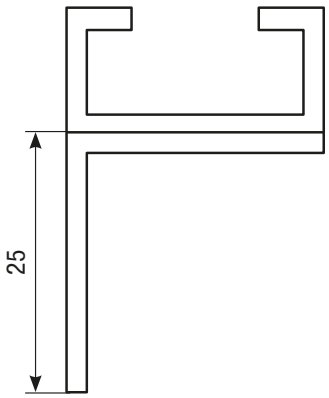
The edges are supplied complete with an aluminium profile required for fastening.
Three types of supports are available.

FASTENING SUPPORT

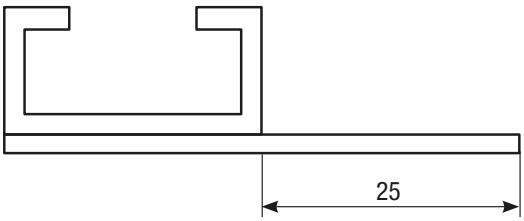
Type "SAC25" | "C"-shaped profile | for edges type B1N – B2N



Type "SAL" | "L"-shaped profile | for edges type B1N – B2N

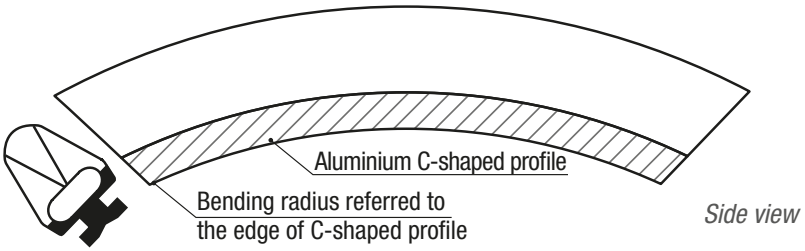


Type "SAI" | "I"-shaped profile | for edges type B1N – B2N



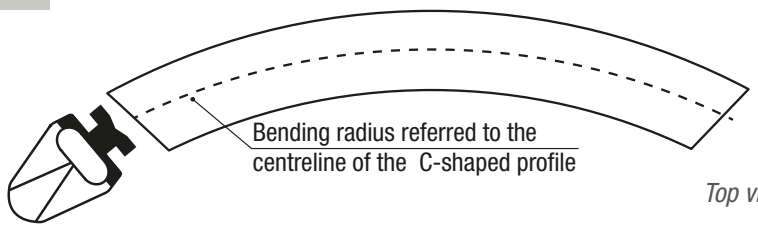
All edges listed can be supplied in curved version with the following bending radiuses:

Figure "A" | for edges type "B1N and B2N"
Minimum bending radius 800 mm



Side view

Figure "B" | for edge type "B2N"

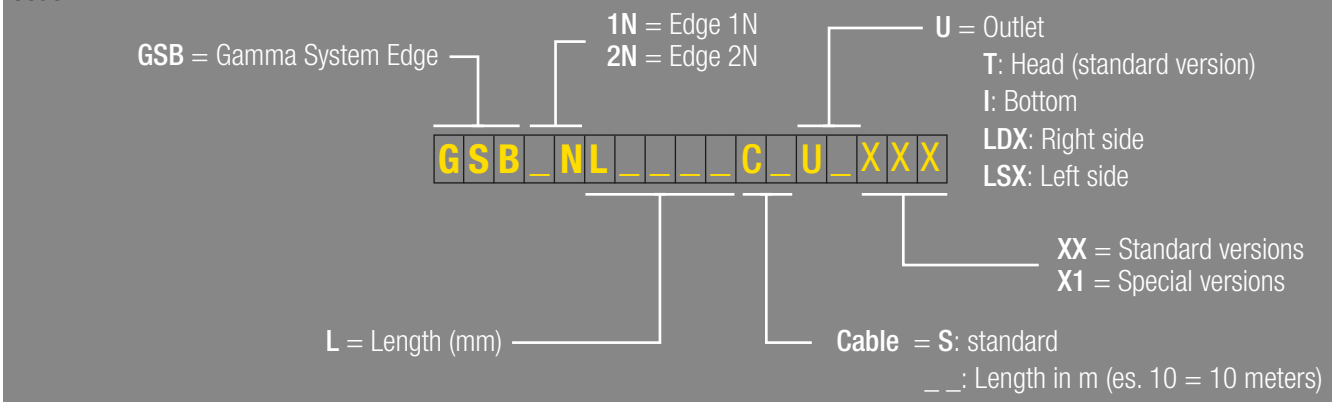


Top view

Attention: Figure "A" AND Figure "B" not executable together on the same profile.

HOW TO ORDER AN EDGE TYPE “B1N” OR “B2N”

Code



CABLE

S: *CS - Standard Cable*, **4x0.35** mm², 3 meters FROR 300/500
_ _: For lengths other than the standard one, please indicate the cable length, e.g. 10 m = **C10**.

Example 1: edge type “B1N” 1000 mm in length with standard cable 3 m in length, head outlet, aluminium profile type SAC25.

GSB1NL1000CSUTXXX

Example 2: edge type “B1N” 1000 mm in length with standard cable 3 m in length, with M8 connector, aluminium profile SAI or SAL 25 or head outlet.

GSB1NL1000CSUTXX1

Example 3: edge type “B1N” 1000 mm in length with standard cable 3 m in length, standard side outlet (right), aluminium profile type SAC25.

GSB1NL1000CSULDXX

Example 4: edge type “B1N” 1000 mm in length with standard cable 3 m in length, with M8 connector, aluminium profile SAI or SAL 25 or side outlet (left).

GSB1NL1000CSULSX1

Example 5: edge “B1N” 1000 mm in length with standard cable 3 m in length, bottom outlet, aluminium profile type SAC25.

GSB1NL1000CSUIXXX

Example 6: edge “B1N” 1000 mm in length with cable 0.6 meters in length, head outlet, aluminium profile type SAC25

GSB1NL1000C06UTXX

Example 7: edge “B1N” 1000 mm in length, double outlet, standard cable 3 m in length, aluminium profile type SAC25.

GSB1NL1000CSCSUTX

Example 8: edge “B1N” 1000 mm in length, double outlet, cable with connector type M8M – M8F.

GSB1NL1000CSCSUT1

TECHNICAL FEATURES – **SENSITIVE EDGES**

Sensor	Type B0	Type B1N	Type B2N	
Max operating angle α	90°	90°	80°	
Pre-run (test piece Ø 80, at 100 mm/s) [mm]	3	6.6	7	
Overrun (test pieces Ø 80, a 100 mm/s)	-	17.3 mm at 250 N 19.3 mm at 400 N 21.3 mm at 600 N	9.1 mm at 250 N 10.1 mm at 400 N 13.1 mm at 600 N	
Max operating force (test pieces Ø 80, a 100 mm/s) [N]	-	137	141	
Operating distance [mm]	3	5		
Overrun operation [mm]	2	20	10	
Material	EPDM	PVC		
Length * (upon request) [m]	max 15	max 6		
Weight [kg/m]	-	0.9	0.8	
Mounting orientation	-	All		
Fastening material	Double-sided adhesive tape	Aluminium profile		
Chemical resistance	Acids, atmospheric agents	Oil, hydrocarbons		
Degree of protection	IP 54	IP 65		
Operating temperature	+5°C to +60°C			
Storage Temperature	+5°C to +60°C			
Max applicable thrust [N]	500			
Power cord**	4x0.35 mm^2			
Output contact	N.O.			
Rated supply voltage	24 Vdc			
B_{10D} sensor	-	113000	80000	
T_{10D} [years] control unit	-	20	14	
Dead surface	25 mm from each side			
Part of human body which can be detected***	Hand, limb, body			
Reference Standard	-	EN 13856-2:2013; EN ISO 13849-1		
Safety Parameters: Sensor + Control Unit		**Sensor + GP02/E**	**Sensor + GP02R.T**	**Sensor + GP04T**
Category	-	3		
PL	-	d		
PFH_D [1/h]	-	$8.58*10^{-8}$	$9.29*10^{-8}$	
No. of operations/year	-	5600		
Usage categories	-	DC13 - 1.5 A AC1 - 1.5 A	AC15 (230) 1.2 A	DC13 0.4 A
Response time with control unit (test piece ø80 at 100 mm/sec T20°C) [ms]	-	59	66	70
Max controllable length [m]	-	12	20	
EC Declaration	-	20CMAC0013	20CMAC0014	
Other European Directives				
2012/19/UE	RAEE			
2011/65/UE	ROHS			
Regulation (CE) n. 1907/2006	REACH			

** The max length for the edge assembled is 6000 mm*
*** For length over 20 m, use wires with section of 1 mm^2*
**** Not suitable to detect fingers.*

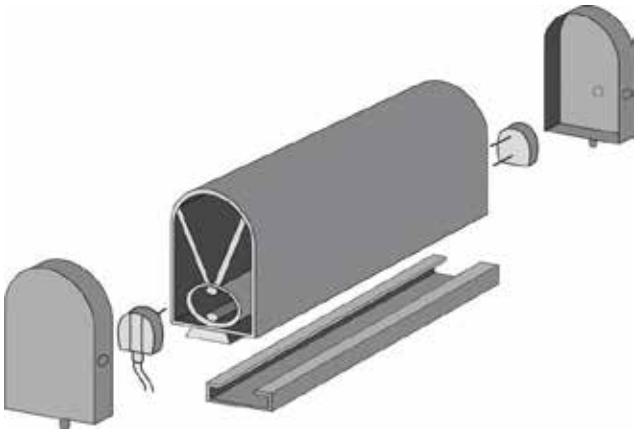
CONDUCTIVE EDGES
PRE-ASSEMBLED OR “DO-IT-YOURSELF” VERSION

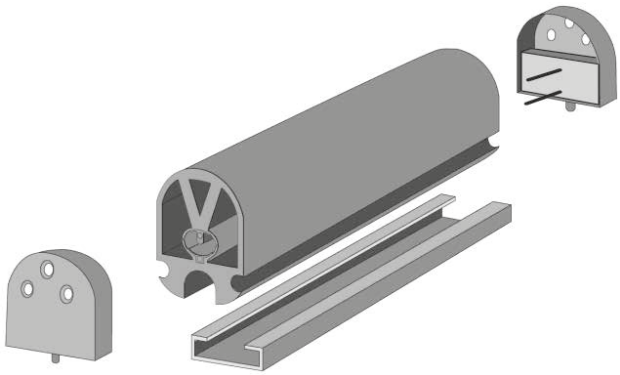
Pre-assembled or “do-it-yourself” version (cut and mounting of accessories by the customer/installer)

The following types are available:
Conductive edge type B1NC 8.2 kΩ
Conductive edge type B1NC-AG with universal foot 8.2 kΩ
Conductive edge type B1NC-AGB with lips and universal foot 8.2 kΩ
Conductive edge type B2C 8.2 kΩ
Conductive edge type B2C-AG with universal foot 8.2 kΩ
Conductive edge type B2C-AGB with lips and universal foot 8.2 kΩ
Conductive sensor type B0C 8.2 kΩ
Conductive edge type B0C-AG with universal foot 8.2 kΩ

CONDUCTIVE EDGE 8.2 KΩ

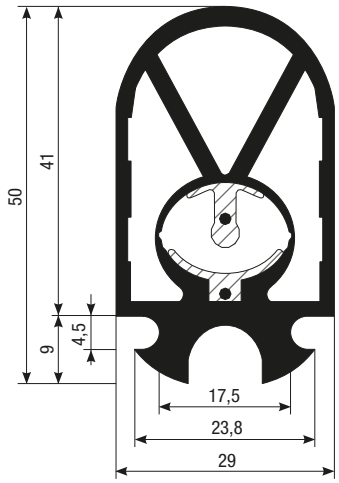
It consists of a TPE thermoplastic profile with two internal co-extruded parts made of conductive plastic material (sensor) and two copper wires, to stabilize the resistive value of the contact over the entire length of the edge.
Particularly suitable for outdoor use, in any type of environment and at any temperature (-15°C to +55°C).
It can be supplied as a “**do-it-yourself**” version, with a series of accessories allowing the customer/installer to implement the edge directly on the machine/system.
Upon request, the edge can be supplied assembled, tailor-cut to measure and complete with all accessories.
The supply of the system is made by means of a 2-wire electric cable, 2x0.35 mm2 CEI 20-22 with die-cast needle connector to allow easy fitting into the two chambers containing the copper cable. Standard length of cable: 3 m.
The electric circuit is closed by a needle connector containing an electric resistance, 8.2kOhm.
The ends of the edge are sealed by means of special end caps which, sealed with a special sealant, ensure better watertight property.
The standard outlet of the supply cable is at the end of the profile. If side or bottom part outlet is needed, please indicate when ordering. For the “do-it-yourself” version, the cable outlet will be implemented by drilling the cable hole into the terminal end cap.



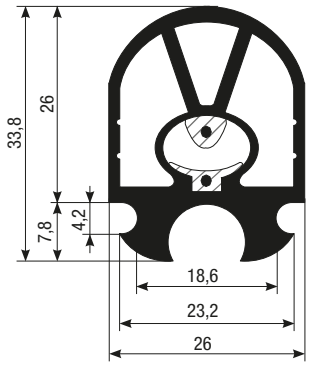


EDGES AVAILABLE

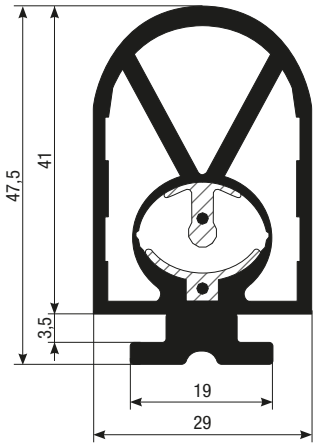
Type B1NC
(roll of 25 m)
Fastening supports:
-SAC29
-SAL29
-SAI29



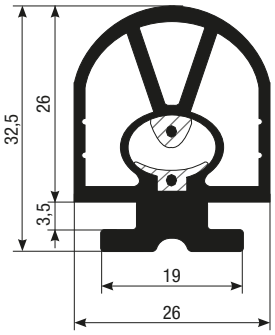
Type B2C
(roll of 25 m)
Fastening supports:
-SAC29
-SAL29
-SAI29



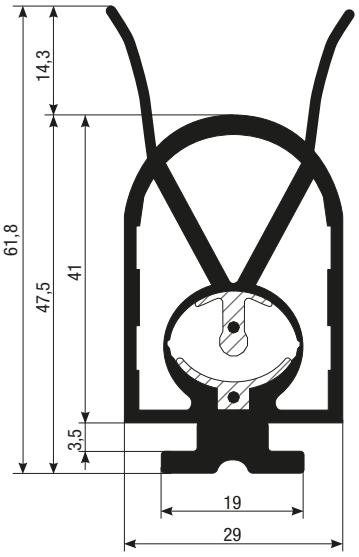
Type B1NC-AG
(roll of 25 m)
Universal foot
Fastening supports:
-SAC25
-SAL25
-SAI25



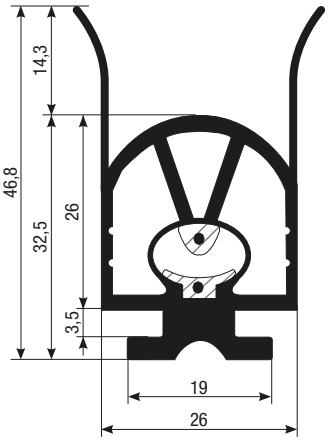
Type B2C-AG
(roll of 25 m)
Universal foot
Fastening supports:
-SAC25
-SAL25
-SAI25



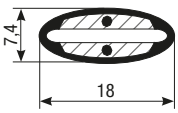
Type B1NC-AGB
With lips
(roll of 25 m)
Fastening supports:
-SAC25
-SAL25
-SAI25



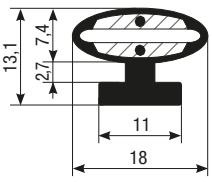
Type B2C-AGB
With lips
(roll of 25 m)
Universal foot
Fastening supports:
-SAC25
-SAL25
-SAI25



Type B0C
(roll of 100 m)



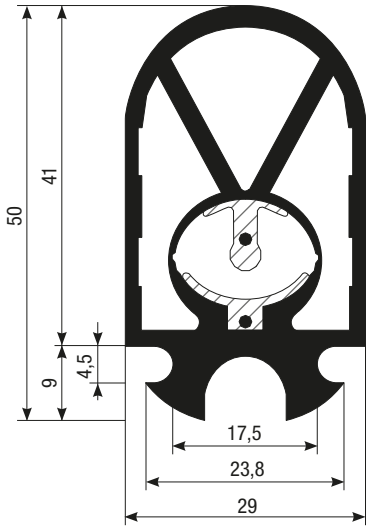
Type B0C-AG
(roll of 100 m)
Universal foot
Fastening supports:
-SAC15



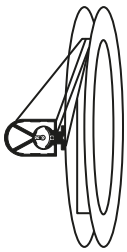
All edges are supplied in rolls, diameter 120x20 cm

Upon request the sensitive edges can be supplied in conformity with the EN 45545-2:2013+A1:2015.Standard.

SENSITIVE EDGE TYPE “B1NC”



Roll of 25 m

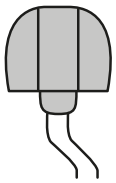


“DO-IT-YOURSELF” VERSION

Please order the single components according to the following pattern:
- 1 Pack of profile type **B1NC profile** (standard roll of 25 m)
- 1 **Connector with electric cable type KCC**
- 1 **Needle connector type KCR** (with resistance)
- 1 **Kit** containing 2 off closing end cap type **TC1**
- 1 **Primer** bottle (10ml) code PR
- 1 **Sealant** bottle (10ml) code CY

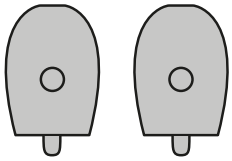
CONNECTORS

KCC | Connector with cable | *Cable length 3 m*



KCR | Connector with resistance 8,2 kΩ

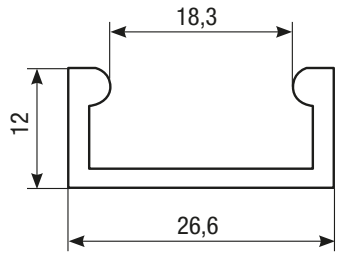
TC1 | Closing end caps | *Pack of 2 pcs.*



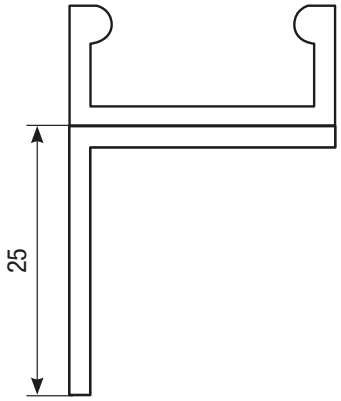
ALUMINIUM SUPPORT FOR EDGE FASTENING

The edge fastening is carried out by installing the edge on a suitable aluminium support. Three types of supports are available.

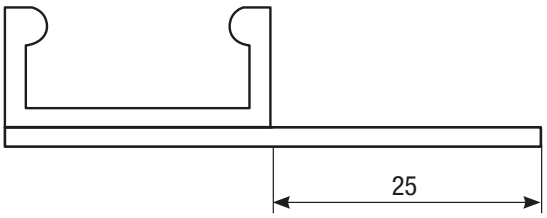
Type "SAC29" | "C"-shaped profile | for edges type B1NC - B2C



Type "SAL29" | "L"-shaped profile | for edges type B1NC - B2C

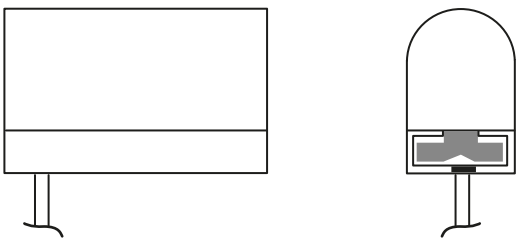


Tipo "SAI29" | "I"-shaped profile | for edges type B1NC - B2C

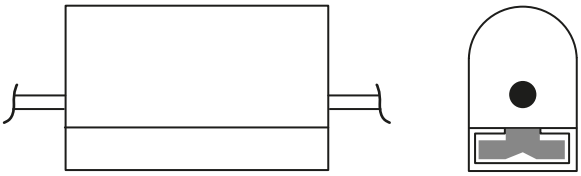


SUPPLY CABLE OUTLET

"UI" | Bottom part outlet

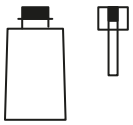


"CCCC" | Double outlet of cable

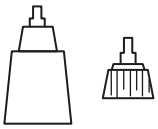


SEALANTS FOR "DO-IT-YOURSELF" EDGES

"GSBPR" | Primer bottle 10 ml type PR

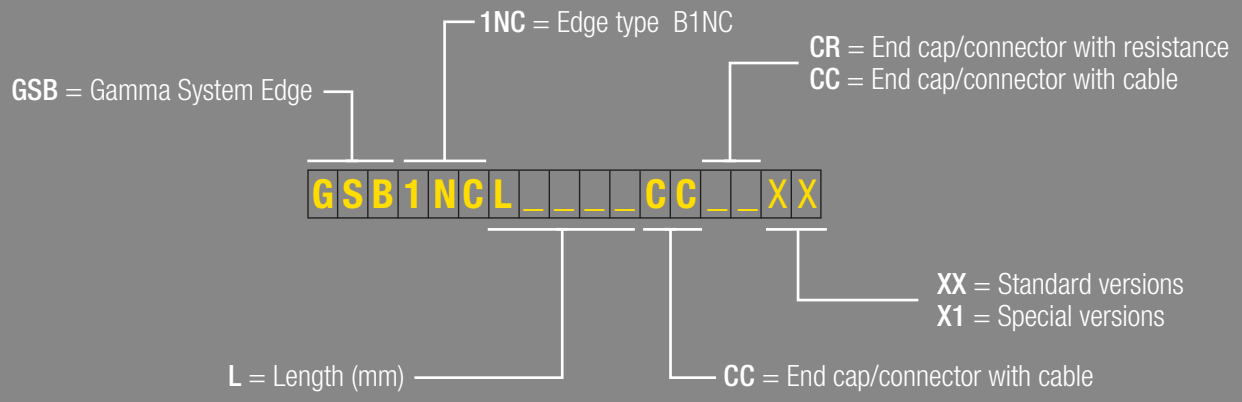


"GSBCY" | Sealant bottle 10 ml type CY



HOW TO ORDER AN EDGE TYPE “B1NC” (ASSEMBLED)

Code



X: *Standard Version with:*

- End cap/connector with cable (2x0.35 mm^2, 3 m in length, FROR 300/500)
- End cap/connector with resistance
- Aluminium support type SAC29

1: *Special Version, e.g.:*

- Cable length other than the standard one (standard 3 m). Please indicate the cable length, e.g. 10 = **C10**.
- Aluminium support Type SAL29 or SAI29

Example 1: edge type “B1NC” 1000 mm in length, with end cap/connector with standard cable 3 m in length and end cap/connector with resistance, aluminium profile type SAC29

GSB1NCL1000CCCRXX

Example 2: edge “B1NC” 1000 mm in length with end cap/connector with standard cable, 3 m in length and end cap/connector with resistance, aluminium profile type SAL29

GSB1NCL1000CCCRX1

Example 3: edge “B1NC” 1000 mm in length with end cap/connector with standard cable and end cap/ connector with resistance, aluminium profile type SAI29

GSB1NCL1000CCCRX2

Example 4: edge “B1NC” 1000 mm in length with double standard cable outlet, 3 m in length, aluminium profile type SAC29

GSB1NCL1000CCCCXX

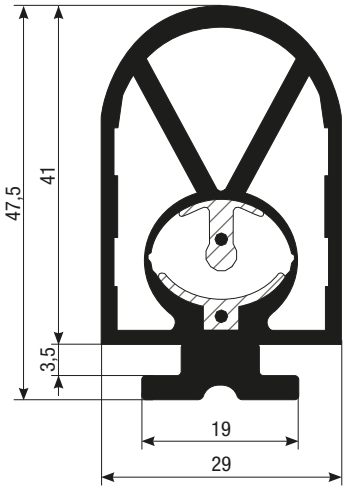
Example 5: edge “B1NC” 1300 mm in length with double standard cable outlet, 3 m in length, aluminium profile SAL29

GSB1NCL1300CCCCX1

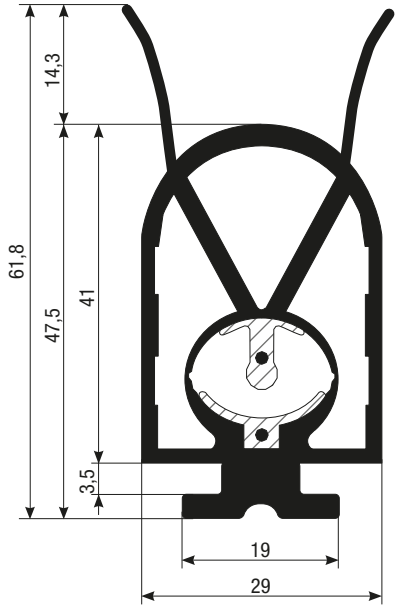
SENSITIVE EDGE TYPE “B1NC-AG” AND “B1NC-AGB”

The edge type B1NC-AG differs from type B1NC in the anchoring foot, which has been studied to make it interchangeable with most of profiles on the market, and for its completion accessories.

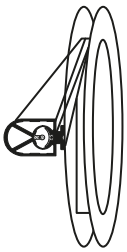
B1NC-AG
Universal foot



B1NC-AGB
with lips and
universal foot



Roll of 25 m



“DO-IT-YOURSELF” VERSION

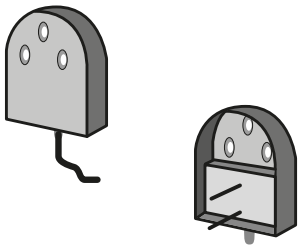
Please order the single components according to the following pattern:
- 1 Pack of **profile type B1NC-AG or B1NC-AGB** (standard roll of 25 m)
- 1 **Kit of end cap/needle connectors type KC1** (1 end cap/connector with electric cable type KC1AGC + 1 end cap / connector with resistance type KC1AGR)
- 1 **aluminium support**, unit of measure expressed in linear meters (type SAC25 – SAL25 – SAI25 for edge fastening)
- 1 **Primer** bottle (10ml) code PR
- 1 **Sealant** bottle (10ml) code CY

CONNECTORS

Kit of end caps/connectors type GSB1NCAGKC1AG containing:

KC1AGC | End cap/connector with cable | *Length 3 m*

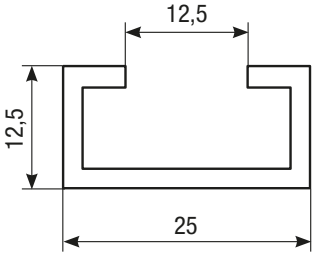
KC1AGR | End cap/connector with resistance



ALUMINIUM SUPPORT FOR EDGE FASTENING

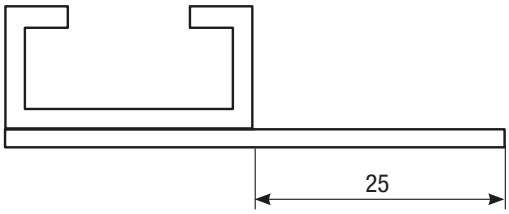
The edge fastening is realised by installing the edge on a suitable aluminium support. Three types of supports are available.

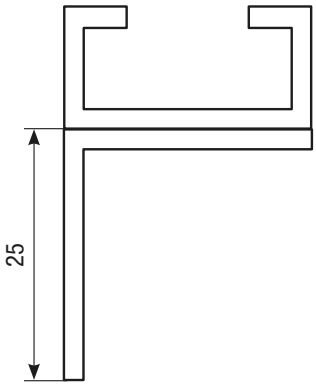
Type “SAC25” | “C”-shaped profile | for edge type B1NC-AG - B1NC-AGB



Type "SAL25" | "L"-shaped profile | for edges type B1NC-AG - B1NC-AGB

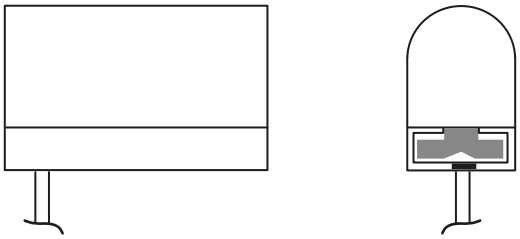
Type "SAI25" | "I"-shaped profile for edges B1NC-AG - B1NC-AGB



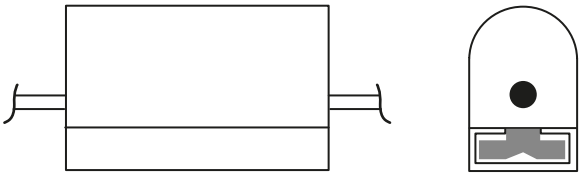


SUPPLY CABLE OUTLET

"UI" | Bottom part outlet

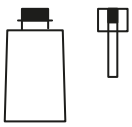


"CCCC" | Double outlet

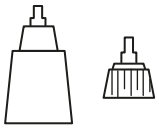


SEALANTS FOR "DO-IT-YOURSELF" EDGES

"GSBPR" | Primer bottle (10ml) type PR



"GSBCY" | Sealant bottle (10ml) type CY



HOW TO ORDER AN EDGE TYPE "B1NC-AG" AND "B1NC-AGB" (ASSEMBLED)

Code

1NCAG = Edge type B1NC-AG

GSB = Gamma System Edge

R = End cap/connector with resistance
C = End cap/connector with cable

G S B 1 N C A G L _ _ _ _ C _ X X

XX = Standard versions
X1 = Special versions

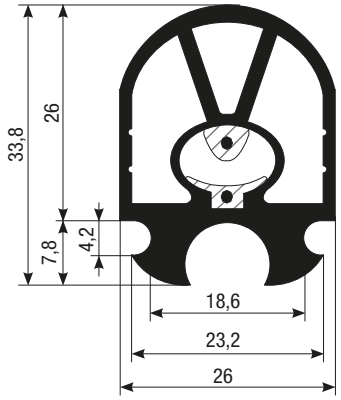
L = Length (mm)

C = End cap/connector with cable

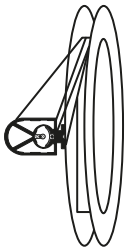
1NCAGB = edge type B1NC-AG

G S B 1 N C A G B L _ _ _ _ C _ X

SENSITIVE EDGE TYPE “B2C”



Roll of 25 m



“DO-IT-YOURSELF” VERSION

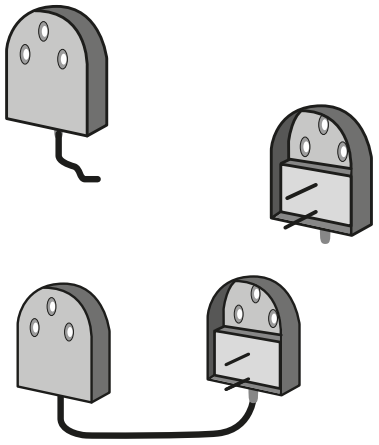
Please order the single components according to the following this pattern:
- 1 Pack of **profile B2C** (standard roll of 25 m)
- 1 **kit end cap/needle connectors** type KC2 (1 end cap/connector with electric cable type KC2C + 1 end cap/connector with resistance type KC2R)
- 1 **aluminium support** with unit of measure expressed in linear meters (type SAC29 – SAL29 – SAI29 for edge fastening)
- 1 **Primer** bottle (10ml) code PRR
- 1 **Sealant** bottle (10ml) code CY

CONNECTORS

KC2C | End cap/connector with cable | *Length 3 m*

KC2R | End cap/connector with resistance | *Pack of 2 pcs.*

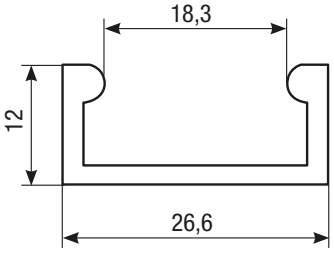
Double end cap/connector with cable | *Length 0.4 meters*



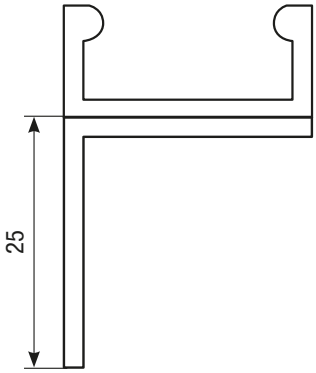
ALUMINIUM SUPPORT FOR EDGE FASTENING

The edge fastening is realised by installing the edge on a suitable aluminium support. Three types of supports are available.

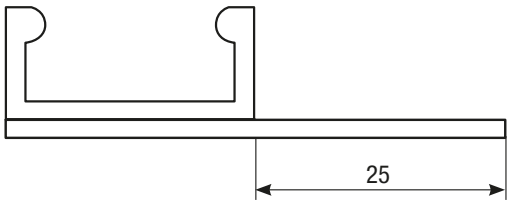
Type “SAC29” | “C”-shaped profile | for edges type B2C



Type "SAL29" | "L"-shaped profile | for edges type B2C

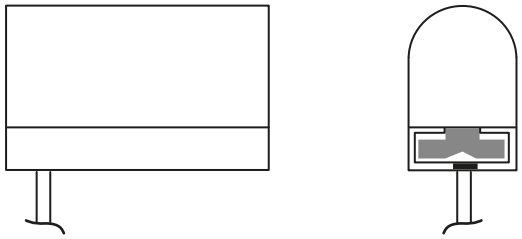


Type "SAI29" | "I"-shaped profile for edges type B2C

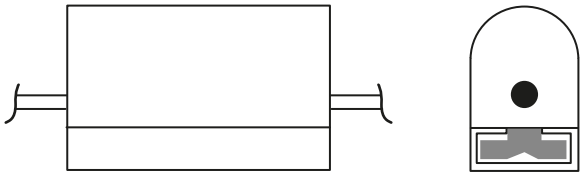


SUPPLY CABLE OUTLET

"UI" | Bottom side outlet

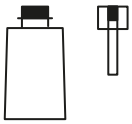


"CCCC" | Double outlet

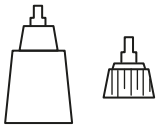


SEALANTS FOR "DO-IT-YOURSELF" EDGES

"GSBPR" | Primer bottle (10ml) type PR

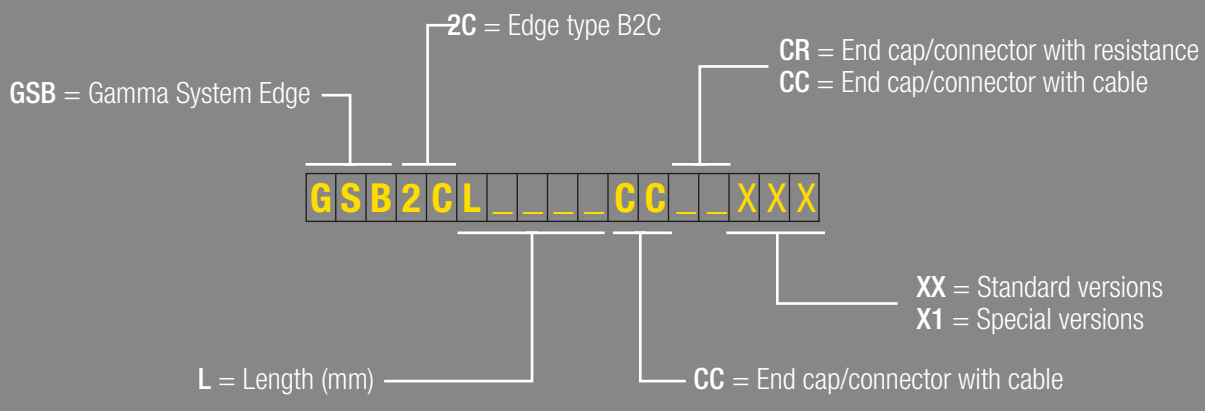


"GSBCY" | Sealant bottle (10ml) type CY



HOW TO ORDER AN EDGE TYPE "B2C" (ASSEMBLED)

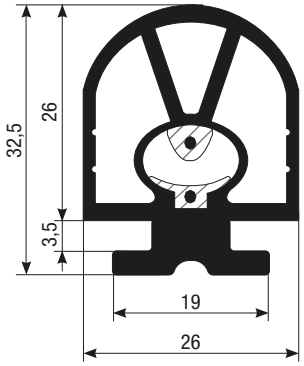
Code



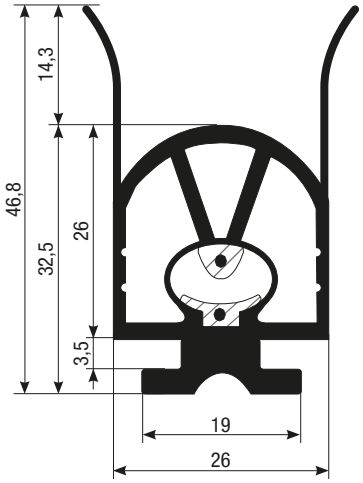
SENSITIVE EDGE TYPE “B2C-AG” AND B2C-AGB”

The edge type B2C-AG differs from type B2C in the anchoring foot, which has been studied to make it interchangeable with most of profiles on the market, and for its completion accessories.

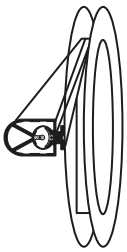
TYPE B2C-AG
Universal foot



TYPE B2C-AGB
with lips and
universal foot



Roll of 25 m



ROLL OF 25 M

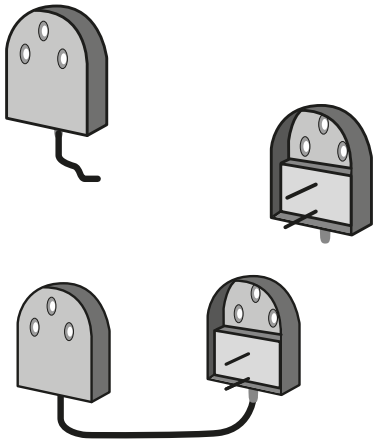
Please order the single components according to the following this pattern:
- 1 Pack of **profile type B2C-AG or B2C-AGB** (standard roll 25 meters)
- 1 **Kit end cap/needle connectors** type KC2 (1 end cap/connector with electric cable type KC2C + 1 end cap/connector with resistance type KC2R).
- 1 **aluminium support** with unit of measure in linear meters (type SAC25 – CAL25 – SAI25 for edge fastening)
- 1 **Primer** bottle (10ml) code PR
- 1 **Sealant** bottle (10ml) code CY

CONNECTORS

KC2C | End cap/connector with cable | *Length 3 meters*

KC2R | End cap/connector with resistance | *Pack of 2 pcs.*

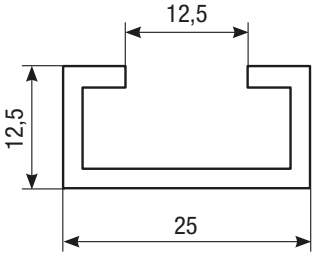
Double end cap/connector with cable | *Length 0.4 meters*



ALUMINIUM SUPPORT FOR EDGE FASTENING

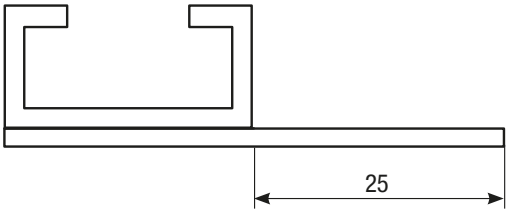
The fastening is carried out by installing the edge on a suitable aluminium support.
Three types of support are available.

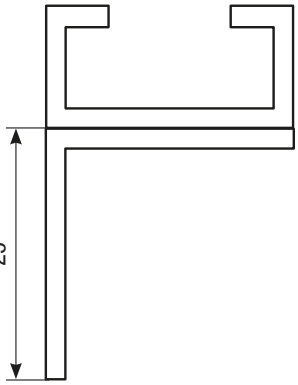
Type “SAC25” | “C”-shaped profile | for edges type B2C-AG - B2C-AGB



Type "SAL25" | "L"-shaped profile | for edges type B2C-AG - B2C-AGB

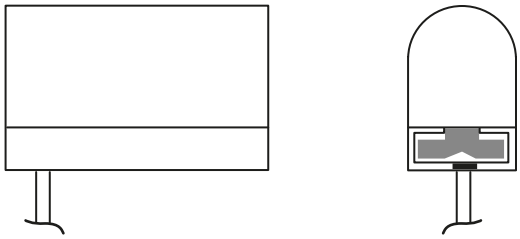
Type "SAI25" | "I"-shaped profile for edges type B2C-AG - B2C-AGB



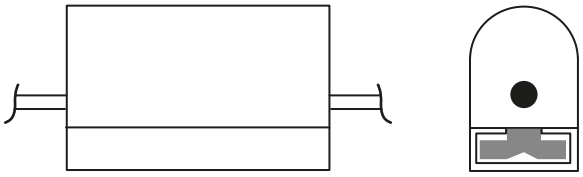


SUPPLY CABLE OUTLET

"UI" | Bottom side outlet

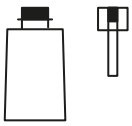


"CCCC" | Double outlet

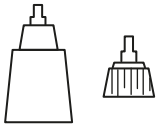


SEALANTS FOR "DO-IT-YOURSELF" EDGES

"GSBPR" | **Primer** bottle (10ml) type PR



"GSBCY" | **Sealant** bottle (10ml) type CY



HOW TO ORDER AN EDGE TYPE "B2C-AG" AND "B2C-AGB" (ASSEMBLED)

Code

2CAG = Edge type B2C-AG

GSB = Gamma System Edge

R = End cap/connector with resistance
C = End cap/connector with cable

G	S	B	2	C	A	G	L	_	_	_	_	C	_	X	X	X

XX = Standard versions
X1 = Special versions

L = Length (mm)

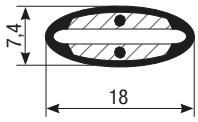
C = End cap/connector with cable

2CAGB = Edge type B2C-AGB

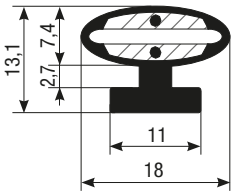
G	S	B	2	C	A	G	B	L	_	_	_	_	C	_	X	X

SENSITIVE EDGE TYPE “BOC” AND “BOC-AG”

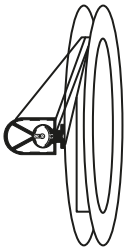
TYPE BOC



TYPE BOC-AG
Universal foot



Roll of 100 m



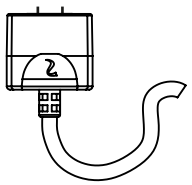
N.B. Upon request the sensitive edge can be supplied in conformity with the EN 45545-2-2013+A1:2015 Standard.

“DO-IT-YOURSELF” VERSION

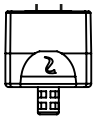
Please order the single components according to the following pattern:
- 1 Pack of **profile BOC** (standard roll of 100 meters)
- 1 **kit end cap/needle connectors** type KCDAG (1 end cap/connector with resistance type KC0AGR + 1 end cap/connector with electric cable type KC0AGC)
- 1 **aluminium support** with unit of measure expressed in linear meters (type SAC15 for edge fastening type BOC-AG)
- 1 **Primer** bottle (10ml) code PR
- 1 **Sealant** bottle (10ml) code CY

CONNECTORS

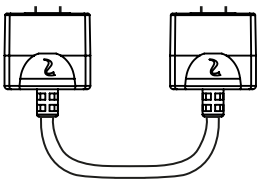
KC0C | End cap/connector with cable | *Length 3 m*



KCOR | End cap/connector with resistance | *Pack of 2 pcs.*



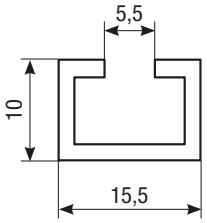
Double end cap/connector with cable | *Length 0.17 m or 0.5 m*



ALUMINIUM SUPPORT FOR EDGE FASTENING

The fastening of the edge type BOC-AG is carried out by installing the edge on a suitable aluminium support.

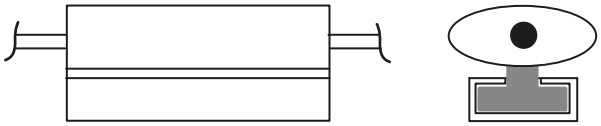
Tipo “SAC15” | “C”-shaped profile | for edge type BOC-AG



SUPPLY CABLE OUTLET

"UT" | Head outlet

"CCCC" | Double cable outlet

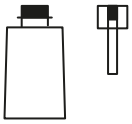


CABLE

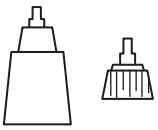
S: *CS - Standard Cable*, **2x0.35 mm²** 3 m in length, FROR 300/500
_ _: For lengths other than the standard one, please indicate the cable length e.g.10 m = **C10**.

SEALANTS FOR "DO-IT-YOURSELF" EDGES

"GSBPR" | **Primer** bottle (10 ml) type PR



"GSBCY" | **Sealant** bottle (10 ml) type CY



HOW TO ORDER AN EDGE TYPE "BOC" AND "BOC-AG" (ASSEMBLED)

Code

OC = Edge type BOC
GSB = Gamma System Edge
CR = End cap/connector with resistance
CC = End cap/connector with cable

G	S	B	O	C	L	_	_	_	_	C	C	_	_	X	X	X

XX = Standard versions
X1 = Special versions
L = Length (mm)
CC = End cap/connector with cable

OCAG = Edge type BOC-AG

G	S	B	O	C	A	G	L	_	_	_	_	C	C	_	_	X

TECHNICAL FEATURES - **SENSITIVE EDGES**

Sensor	**Type B1NC - Type B1NC-AG**			**Type B2C - Type B2C-AG**		
Max operating angle α	90°					
Pre-run (test piece Ø 80 - 100 mm/sec) [mm]	5.05			5.40		
Overrun (test pieces Ø 80 - 10 mm/sec)	15.64 mm at 250N 17.94 mm at 400N 20.24 mm at 600 N			3.28 mm at 250N 4.18 mm at 400N 6.88 mm at 600N		
Max operating force (test piece Ø 80 - 100 mm/sec)	146 N (-15°C)			84 N (-15°C)		
Max response time with Gamma System control units [ms]	50			54		
Material	TPE (black colour)					
Length*	Mounted version, max 6 m or 25 m-long roll					
Max length of sensor [m]	25 (can be controlled via control unit)					
Weight [kg/m]	0.6			0.4		
Mounting orientation	All					
Fastening material	Aluminium profile standard Length = 6 m					
Dimensions of non-sensitive surface	40 mm from each end					
Operating temperature	+5°C to +55°C					
Storage temperature	+5°C to +55°C					
Chemical resistance	*See User Manual*					
Max applicable thrust [N]	500					
Degree of protection (EN 60529)	IP65					
Power cord**	2x0.35 mm^2					
Output contact	N.O.					
Max. length of connection cables [m]	100					
Rated supply voltage	24 Vdc					
Max contact voltage [V]	30					
Max contact current [mA]	30					
B_{10D} sensor	192000					
T_{10D} [years] Control unit	> 20					
Part of human body which can be detected***	Hand, limb, body					
Reference standard	EN ISO 13856-2:2013; EN ISO 13849-1; EN 12978:2009					
Safety Parameters: Sensor + Control Unit	**Sensor + GP02R**	**Sensor + GP02R-C**	**Sensor + GP04R**	**Sensor + GP02R**	**Sensor + GP02R-C**	**Sensor + GP04R**
Category	3					
PL	d					
PFH_D [1/h]	$8.58*10^{-8}$		$9.29*10^{-8}$	$8.58*10^{-8}$		$9.29*10^{-8}$
No. of operations/year****	9000					
Usage categories	AC15 (230) 4A	AC15 (230) / DC13 (24) 3A	DC13 0.4A	AC15 (230) 4A	AC15 (230) / DC13 (24) 3A	DC13 0.4A
EC Declaration	16CMAC0044			16CMAC0045		
Other European Directives						
2012/19/UE	RAEE					
2011/65/UE	ROHS					
Regulation (EC) n°1907/2006	REACH					

** The maximum length for the edge assembled is 6000 mm. For longer lengths they can be split into more parts and then connecting the sensors in series between them.*

*** For length over 20 meters, use wires with section of 1 mm^2*

**** Not suitable to detect fingers.*

***** Considered the maximum number of operations.*

TECHNICAL FEATURES - **SENSITIVE EDGES**

Sensor	Type BOC		Type BOC-AG
Max operating angle α	90°		
Pre-run (test piece Ø 80 - 100 mm/sec) [mm]	1.9		
Overrun (test piece Ø 80, 10 mm/sec)	3 mm at 250 N 3.3 mm at 400 N 4.3 mm at 600 N		
Max operating force (test piece Ø 80, 10 mm/sec) [N]	140		
Response time with Gamma System control units [ms]	< 54		
Material	TPE (black colour)		
Length*	Roll of 100 m		Mounted version, max 6 m or roll of 100 m
Max length of sensor [m]	25 (can be controlled via control unit)		
Weight [kg/m]	0.08		0.12
Fastening Material	NA		Aluminium profile - standard L = 6 m
Dimensions of non-sensitive surface	2 mm from each end		
Operating temperature	+5°C to +55°C		
Storage temperature	+5°C to +55°C		
Chemical resistance	*See User Manual*		
Max applicable thrust [N]	500		
Degree of protection (EN 60529)	IP65		
B_{10D} sensor	200000		
T_{10D} [years] Control unit	20		
Power cord**	2x0.25 mm^2		
Output contact	N.O.		
Max length of connection cables [m]	100		
Rated supply voltage	24 Vdc		
Part of human body which can be detected ***	Hand, limb, body		
Reference standard	EN ISO 13856-2:2013; EN ISO 13849-1; EN ISO 12978:2003+A1:2009		
Safety Parameters: Sensor + Control Unit	**Sensor + GP02R**	**Sensor + GP02R-C**	**Sensor + GP04R**
Category	3		
PL	d		
PFH_D [1/h]	$8.58*10^{-8}$		$9.29*10^{-8}$
No. of operations/year ****	10000		
Usage categories	DC13 1 A	AC15 (230)/DC13 (24) 3A	DC13 0,4A
Response time with control unit (test piece Ø 80, a 100 mm/s, T20°C) [ms]	23		
EC Declaration	20CMAC0015		
Other European Directives			
2012/19/UE	RAEE		
2011/65/UE	ROHS		
Regulation (CE) n°1907/2006	REACH		

** The maximum length for the sensor assembled is 6000 mm. For longer lengths they can be split into more parts by connecting in series the sensors between them.*

*** For length over 20 meters, use wires with section of 1 mm^2*

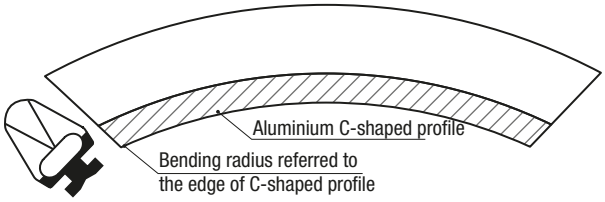
**** Not suitable to detect fingers.*

***** Considered the maximum number of operations.*

SPECIAL WORKS

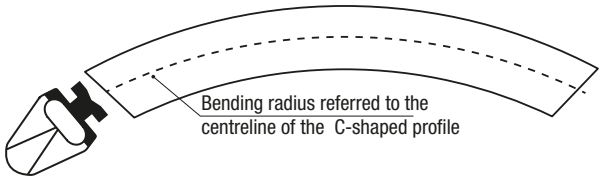
All edges listed can be supplied in curved version with minimum bend radius of 500 mm.

Figure "A" | For edges type "B1NC" - "B1NC-AG" - "B2C" - "B2C-AG"



Side view

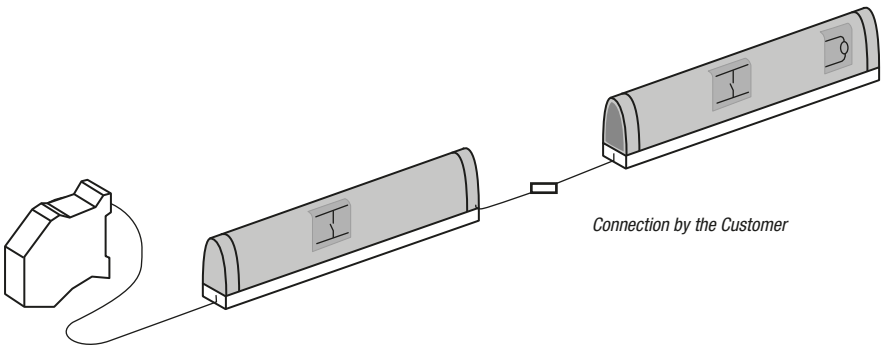
Figure "B" | For edges "B1NC" - "B1NC-AG" - "B2C" - "B2C-AG" - "B0C" - "B0C-AG"



Top view

Attention: Figure "A" and Figure "B" not executable together on the same profile

CONNECTION IN SERIES OF 2 OR MORE RESISTIVE EDGES 8.2Ω



In case of two or more resistive sensors connected "IN SERIES", in order to ensure correct connection, the first sensor shall be provided with the input and output cable and the last sensor of the series with the input cable and final resistance (see figure).

In case of "DO-IT-YOURSELF" version, the following accessories shall have to be provided for connecting in series more resistive sensors.
Example of order for connecting two sensors:

- For type **B1NC**:
  3 needle connectors with cable type KCC (code GSB1NKCC)
  1 needle connector with resistance type KCR (code GSB1NKCR)
  2 packs of closing end caps type TC1 (code GSB1NCTC1)

- For type **B2C**:
  3 needle connectors with cable type KC2C (code GSB2CKC2C)
  1 needle connector with resistance type KC2R (code GSB2KC2R)

- For type **B0C**:
  3 needle connectors with cable type KC0C (code GSB0CKCC)
  1 needle connector with resistance type KC0R (code (code GSB0CKCR)

WIRELESS SAFETY SYSTEM FOR CONDUCTIVE EDGES

TRANSCEIVER INTERFACE

Model SAFESRCT 868 MHz "FM" - INPUT OF SAFETY EDGE SIGNAL 8.2k0

Model SAFEPRC4 - 433 MHz "FM" - INPUT OF SAFETY EDGE SIGNAL NC/8.2k0
Model SAFEPRC8 - 868 MHz "FM" - INPUT OF SAFETY EDGE SIGNAL NC/8.2k0

STATIONARY WIRELESS "TRANSCEIVER" RADIO SAFETY

Model SAFESRCRX 868 MHz "FM" - SAFETY OUTPUTS 2 NC/8.2k0

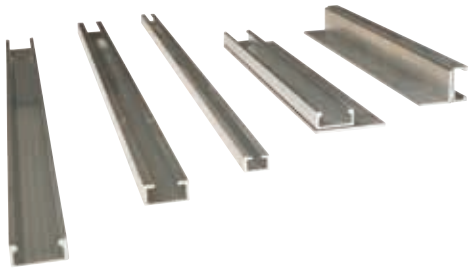
Model SAFEDECX4 - 433 MHz "FM" - SAFETY OUTPUTS 3 NC/8.2k0
Model SAFEDECX8 - 868 MHz "FM" - SAFETY OUTPUTS 3 NC/8.2k0

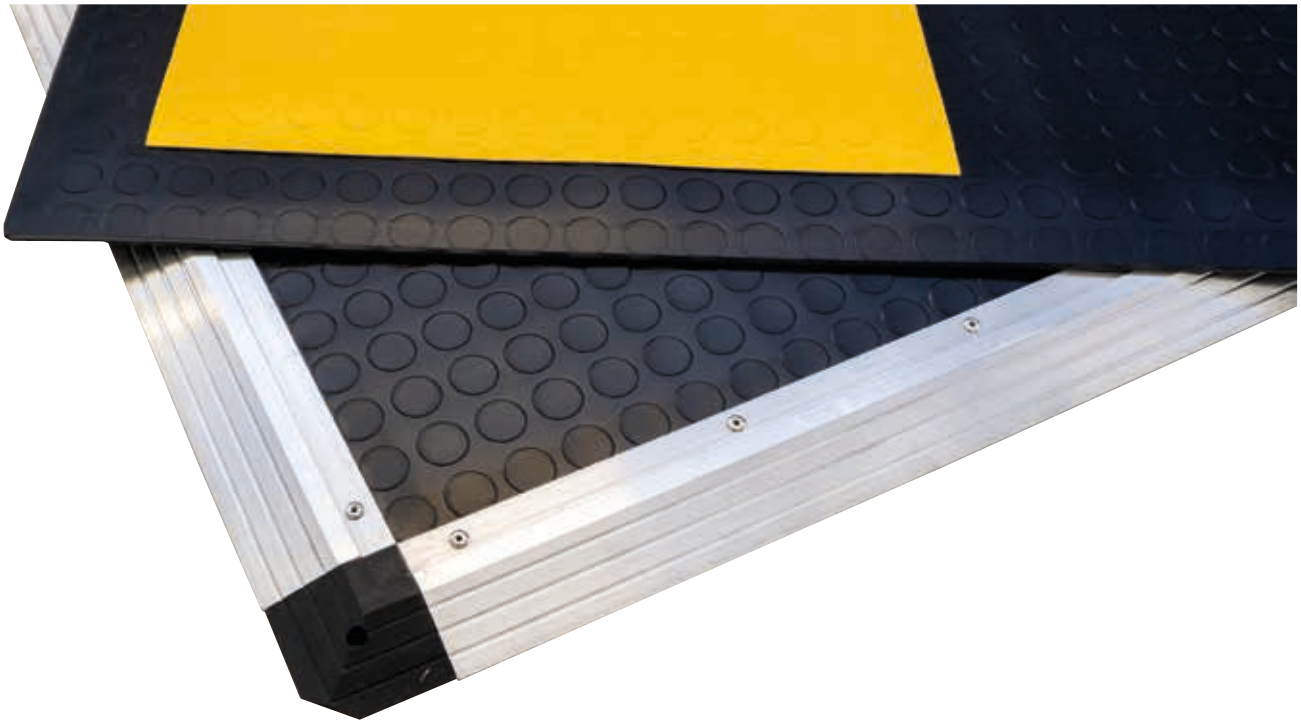
CONTROLLABLE SAFETY DEVICES 8
MAXIMUM RANGE 30 m
DEGREE OF PROTECTION IP65
OPERATING TEMPERATURE -20 ... +55°C

RADIOSAFE is made up of high technology appliances, protected by sturdy and easy-to-install enclosures ensuring a high degree of protection against environmental conditions.
The transmission via radio between the "transceiver" interface (safety edge interface) and the stationary "transceiver" eliminates the need that one or more safety edges to be connected to the control unit by wires. This ensures a more manageable and safe application of the safety edge directly onto the gate in movement.
Radiosafeis a highly professional safety device which, in combination with 8.2kΩ safety edges, meets the safety provisions required by ENI ISO 12978:2003+A1:2009 Standard.
The stationary "transceiver" directly connects to the safety edge and is installed on the moving part of the installation.
The transceiver unit is able to manage up to 8 security device via radio and is fitted with 3 safety outputs NC/8.2kΩ settable by jumpers. The interface is protected by a semi-transparent cover which allows verifying the status of the safety devices and the level of battery charge (via LEDs).
Each radio controlled safety device can be associated with one of the three safety outputs by a dip-switch.
The 3V lithium battery (for SAFEPR model) is highly reliable under all weather conditions and ensures a high level of safety and top performance in all environments.
Alkaline battery (for model SAFESFRCT).

Note: The choice of operating frequency for the safety edge should be made after taking into consideration the operating frequency of the other units in the installation.

E.g. If the control units are working at 433 MHz, it is good practice to use a safety radio edge that works at 868 MHz and vice-versa.





SAFETY MATS

The pressure-sensitive mat is a “safety device” which features an electro-pressure sensible element to detect the presence of persons.
The presence of one or more persons over 35 kg closes a contact inside the sensor.
The change in state of the internal sensor (NO to NC) is processed by the control unit which emits a machine stop signal and removes the hazardous situation.

SAFETY BUMPERS

The pressure-sensitive safety bumper is used to protect personnel from collision against vehicles or moving parts of an industrial machine such as AGV, stacker cranes, wire-guided vehicles, automatic warehouses, etc…
When minimum compression is applied to the bumper, after a pre-run, the internal contact of the sensor closes and changes its state (from NO to NC). The “control unit” immediately emits a stop signal indicating that a change in the sensor state has occurred and removes the hazardous situation.
After the pre-run, the bumper still allows for a compression called “overrun”, which varies according to the bumper depth, and such to further soften the impact.

N. 886

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