

The image shows a close-up, angled view of an ALINOX insulated conductor rail system. The rail itself is a long, white, T-shaped extrusion. It is supported by a series of black metal brackets that are mounted on a base. Each bracket has a spring mechanism, likely to maintain constant pressure on the rail. The rail has a yellow and green stripe along its length, indicating different electrical phases or ground. The background is a light blue and white geometric design.

ALINOX

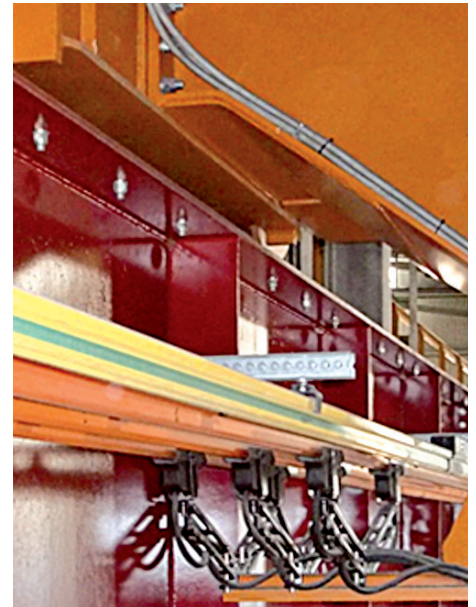
INSULATED CONDUCTOR RAIL FOR ELECTRICAL FEEDING OF CRANES

Features, advantages and benefit

The insulated conductor rail system **CARIBONI**, series ALINOX is the most suitable solution for the electric feeding of cranes, hoists and other mobile machines with continuous load up to 1300A. ALINOX is designed and realized in order to offer the best safety guarantees against accidental contact, according to the standard EN 60529. The conductor is made of aluminium and stainless steel.

Other ALINOX main features are:

- High Solidity and Reliability;
- Quick and easy installation, also thanks to the self-lock system used for fixing the support hanger and the joint box;
- Minimal encumbrance;
- Reduced maintenance costs;
- Versatility: suitable for indoor and outdoor applications;
- All the components are realized in anticorrosion material;
- Highly competitive price compared to the traditional copper conductor rails.



Our company and our products are certified according these standards:

ISO9001

ISO14001

BS OHSAS 18001

CE MARK: it guarantees that Cariboni's products are complying with the European standards concerning safety of products.

LOVAG - ACAE Certificate: LOVAG is an organisation acknowledged by the European Organisation for all Tests and Certifications (EOTC) of the European Community.

ACAE is an Italian member of LOVAG.



Technical specifications

Nominal Load 25°C	Load DC 50% 25°C	Section		Rail Sections Length mm	Max Support Distance mm	Min Distance between Rail mm	Max Operating Voltage V	Resistance 25°C $\Omega/m \cdot 10^{-4}$	Impedance $\Omega/m \cdot 10^{-4}$	
		Aluminium mm ²	Stainless steel mm ²						50 Hz 25°C	60 Hz 25°C
400 A	550 A	137	10	4000	2000	70	600	2,35	2,77	2,95
550 A	750 A	231	10	4000	2000	70	600	1,40	1,97	2,14
900 A	1200 A	441	13	6000	3000	120	600	0,73	1,58	1,78
1100 A	1500 A	618	13	6000	3000	120	600	0,52	1,47	1,68
1300 A	1800 A	780	13	6000	3000	120	600	0,41	1,41	1,63

Admissible temperature for standard PVC insulating housing (addition of the ambient temperature and the operating temperature):

-30°C/+85°C

Admissible temperature for high temperature NORYL insulating housing (addition of the ambient temperature and the operating temperature) for 900 A, 1100 A and 1300 A lines:

-30°C/+145°C

Protection degree of housing according to EN 60529:

IP23

Maximum travelling speed:

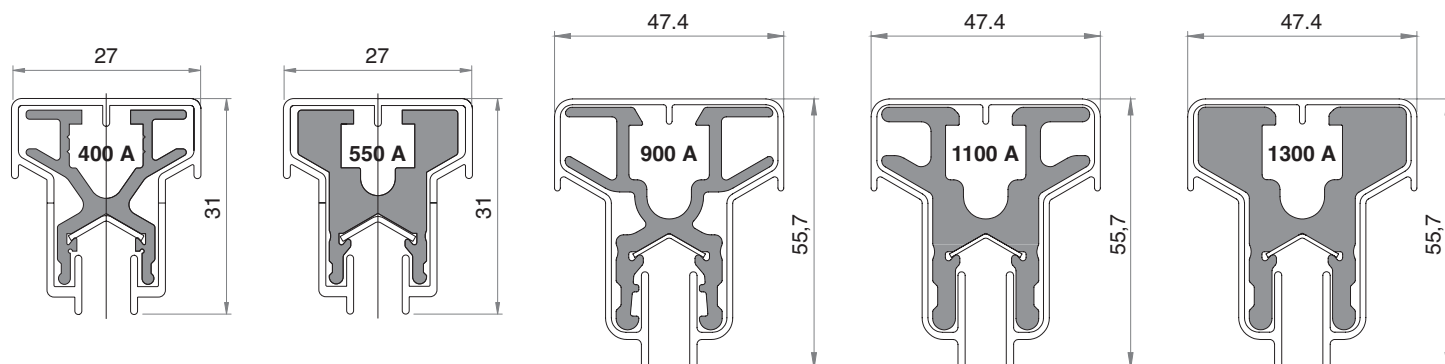
200 m/min

Resistance of the insulating materials to abnormal heat CEI EN 60439-2

Complying

Resistance to flame propagation CEI EN 60439-2

Complying



ALINOX 400-550 A

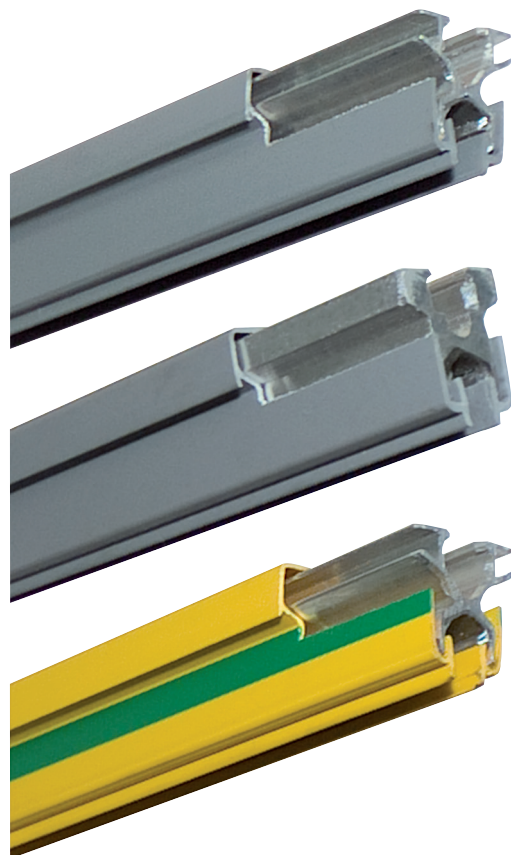
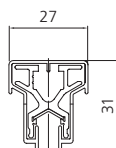
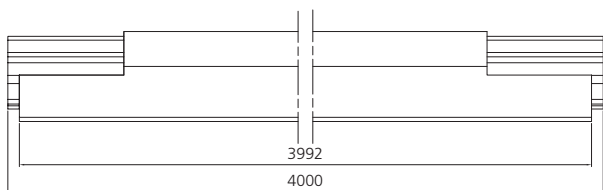
Components

Insulated conductor rail, joint clamp & feeder clamp

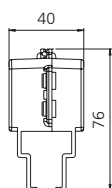
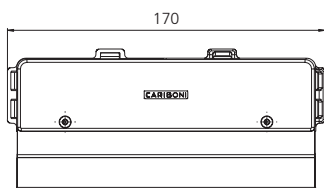
1 Insulated conductor rail**FEATURES:**

It is made of Aluminium and Stainless Steel covered by an insulating housing. Conductor rails are supplied in lengths of 4 m and its outer dimensions are the same for both 400A and 550A type.

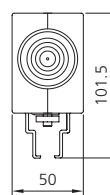
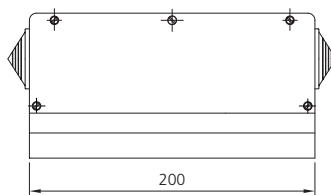
CODE	LOAD (A)	L (m)	COLOUR	WEIGHT (kg/m)
03.09603.90	400	4	grey	0,625
03.09602.90	550	4	grey	0,860
03.09603.90T	400	4	yellow/green	0,625

**2** Joint clamp 400-550 A**FEATURES:**

It is composed by an insulating sheath and by an Al joint clamp used to realize electric and mechanical connection of two contiguous rails. Bolts and nuts are of stainless steel.



CODE	WEIGHT (kg/pc)
03.09605.90	0,22

3 Feeder clamp 400-550 A

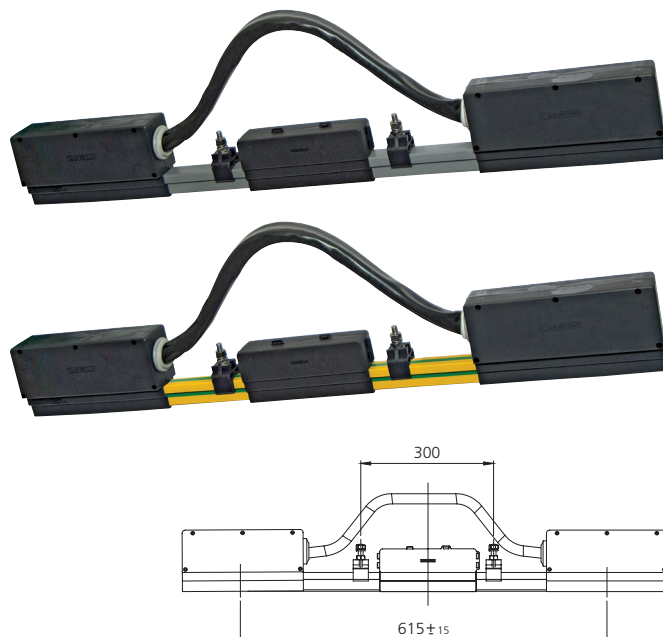
CODE	WEIGHT (kg/pc)
03.09610.90	0,425

Expansion joint, sectionalizing joint & insulated end cap

4 Expansion joint 400-550 A

FEATURES:

It has to be used in case of significant temperature variations and in any case for systems longer than 150 m. It's used to compensate the linear expansion of the line, avoiding possible deformations. It's composed by two sliding pieces of rail, supported by two support hanger and two feeder clamps connected by an electric flexible cable.

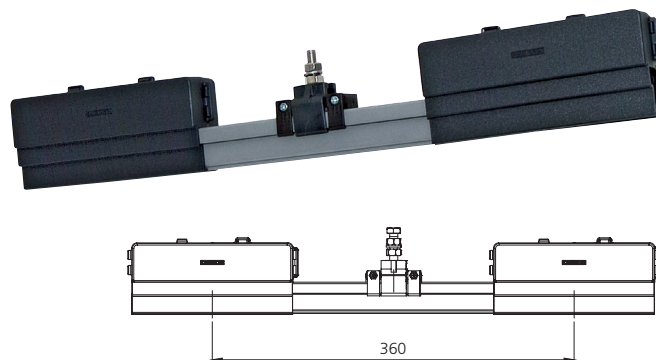


CODE	LOAD (A)	L (m)	COLOUR	WEIGHT (kg/pc)
03.09620.90	400-550	0,615	grey	2,675
03.09620.90T	400-550	0,615	yellow/green	2,675

5 Section joint 400-550 A

FEATURES:

It's used to divide sections of the line electrically, in order to realize parking areas of the machines for the maintenance or for signalling. The sectionalizing joint has not to be installed on the earth rail. The sectionalizing joint is supplied with two joint clamps and the support hanger.



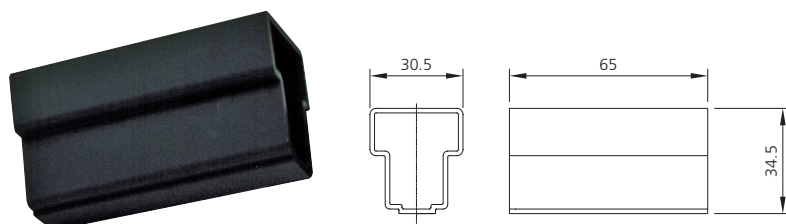
CODE	LOAD (A)	L (m)	COLOUR	WEIGHT (kg/pc)
03.09630.90	400-550	0,360	grey	0,500

6 Insulated end cap

FEATURES:

It used to insulate the extremities of the line.

CODE	LOAD (A)	COLOUR	WEIGHT (kg/pc)
7.21.00.0629	400-550	black	0,005



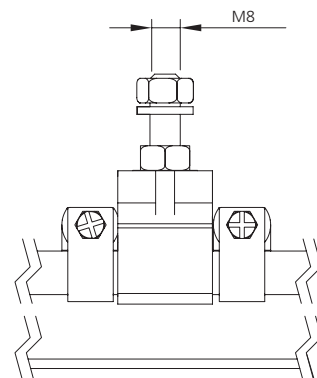
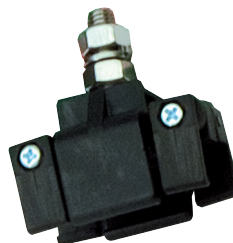
Fixed point hanger, support hanger and feeder connector

7 Fixed point hanger

FEATURES:

The fixed point hanger, made of insulating material, is used to share the expansions of the rails. It is composed by a couple of clamps put across a support hanger.

CODE	HARDWARE	COLOUR	WEIGHT (kg/pc)
03.09625.90	Stainless steel	black	0,060

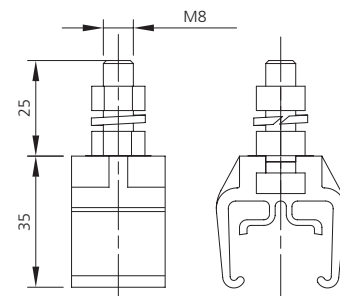


8 Support hanger

FEATURES:

It is used to hold the rails and at the same time to allow their sliding, due to the thermic expansion. It's made of insulating material and easily applied "by click" on the rail with a max. distance of 2 m.

CODE	HARDWARE	COLOUR	WEIGHT (kg/pc)
03.09526.91N	Stainless steel	black	0,050



9 Feeder connector

FEATURES:

It is used to connect the feeding cable to the feeder clamps.

CODE	LOAD (A)	MAX CABLE (mmq)	WEIGHT (kg/pc)
8.14.00.0023	400	95	0,040
8.14.00.0024	550	120	0,070



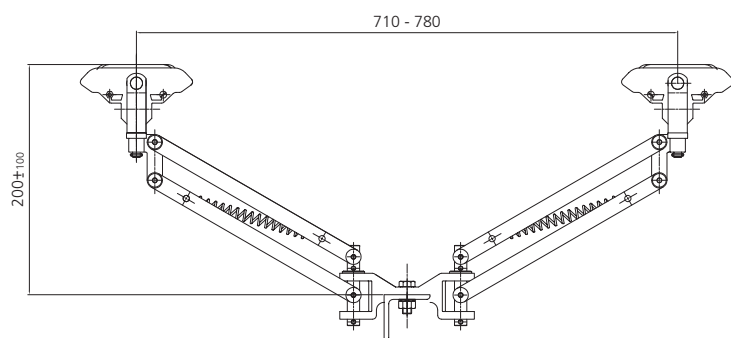
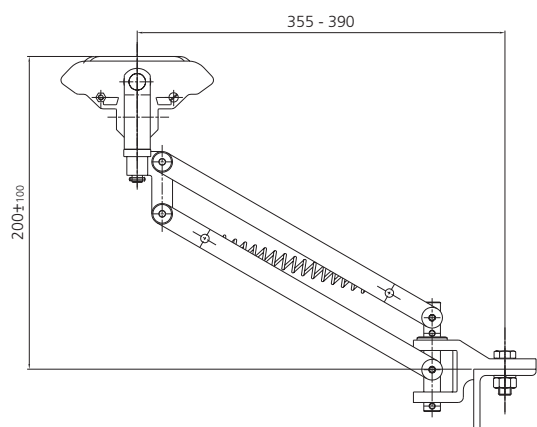
Current collector

10 Current collector

FEATURES:

The current collector is available in two versions; single or double; it's flexible, in order to compensate eventual displacements due to the movement of the mobile machine, guaranteeing the optimal contact on the rail. The contact shoe is made of Cu alloy protected by an insulating cover and can be easily replaced. Max section 50 mm² of derivation cable. Recommended section 35 mm². Bar angle suitable: 60x60.

CODE	TYPE	LOAD*	WEIGHT (kg/pc)
03.09640.90	Simple	125 A	1,700
03.09641.90	Double	250 A	3,340

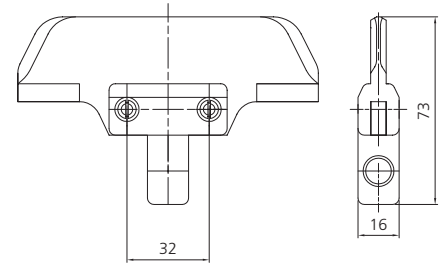
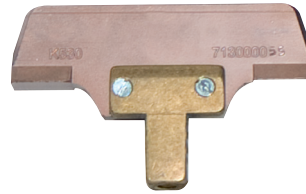


(*) For current collectors moving at low speed or standing still the maximum amperage must be 50% of the indicated value or else the current collector duty cycle must be 50% (time cycle 5 minutes).

Spare parts: Contact shoe, insulated shoe holder, tension spring

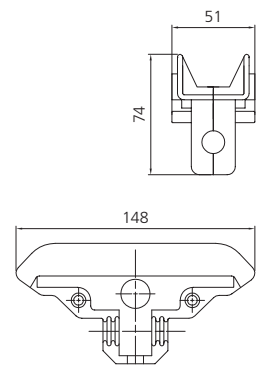
11 Contact shoe

CODE	WEIGHT (kg/pc)
03.09650.90	0,260



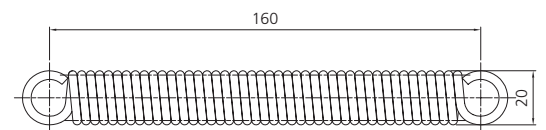
12 Insulated shoe holder

CODE	WEIGHT (kg/pc)
03.09262.91N	0,160



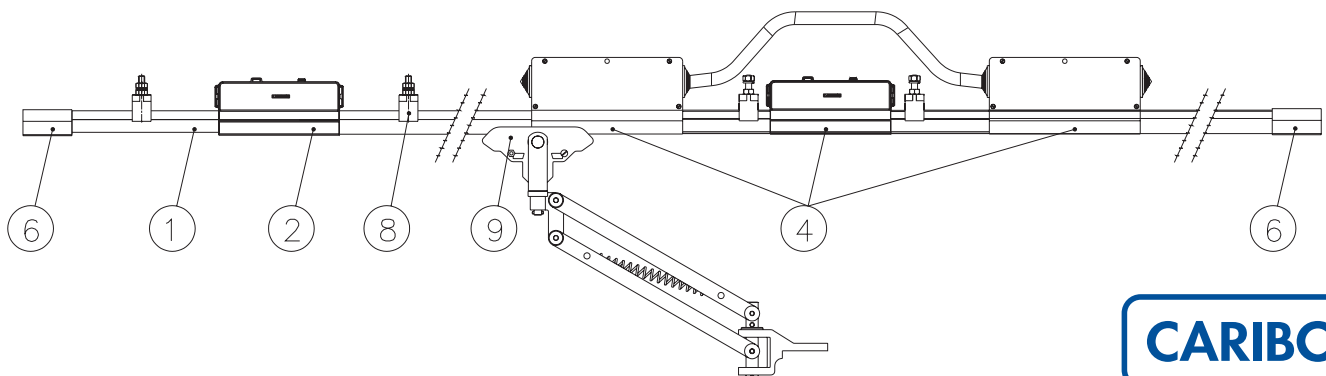
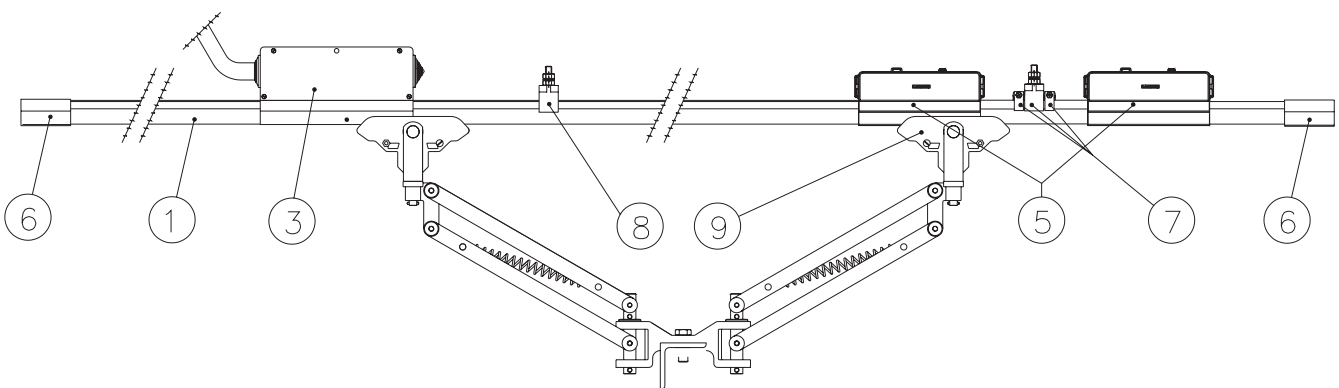
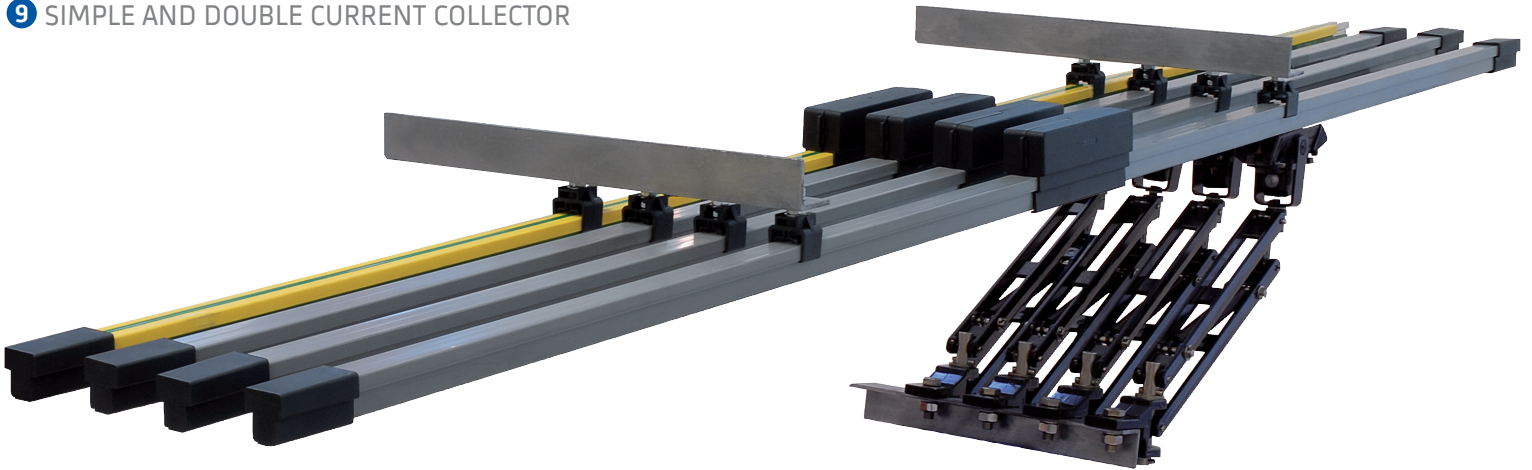
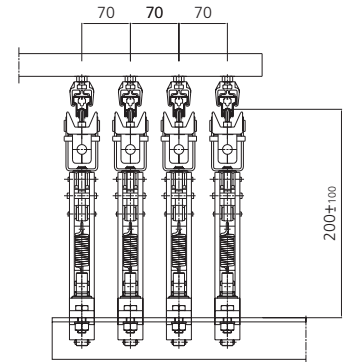
13 Tension spring

CODE	WEIGHT (kg/pc)
7.14.00.0107.P	0,150



Example of a possible installation

- ❶ INSULATED CONDUCTOR RAIL
- ❷ RIGID JOINT CLAMP
- ❸ FEEDER CLAMP
- ❹ EXPANSION JOINT
- ❺ SECTIONALIZING JOINT
- ❻ END CAP
- ❼ FIXED POINT HANGER
- ❽ SUPPORT HANGER
- ❾ SIMPLE AND DOUBLE CURRENT COLLECTOR



ALINOX HP 900-1300 A

Components

Insulated conductor rail

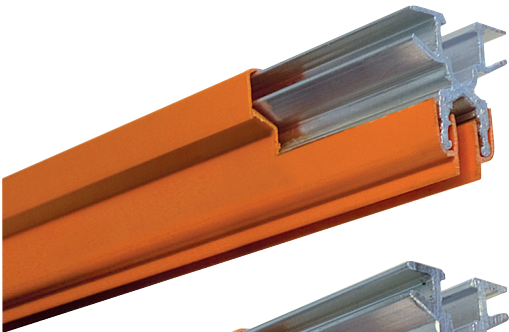
14 Insulated conductor rail

FEATURES:

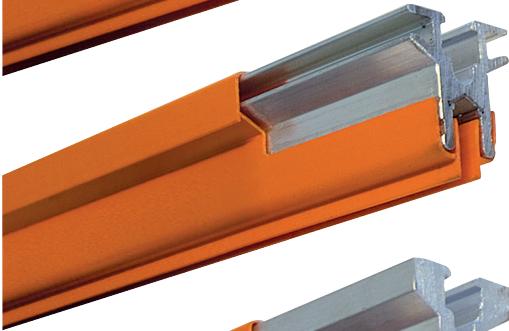
It is made of Aluminium and Stainless Steel covered by an insulating housing. The max admissible temperature on the insulating housing depends of material of which is composed (PVC o NORYL). Conductor rails are supplied in lenghts of 6 m and its outer dimensions are the same for 900A, 1100A and 1300A types.

CODE	DESCRIPTION	LOAD (A)	L (m)	COLOUR	WEIGHT (kg/m)
03.09606.90	Standard	900	6	orange	1,58
03.09606.91	High temperature			white	
03.09607.90	Standard	1100	6	orange	2,04
03.09607.91	High temperature			white	
03.09608.90	Standard	1300	6	orange	2,50
03.09608.91	High temperature			white	

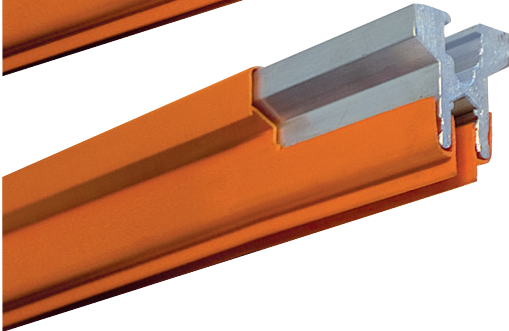
900A



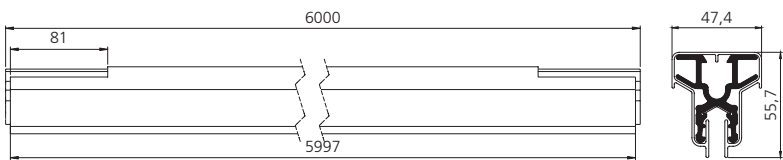
1100A



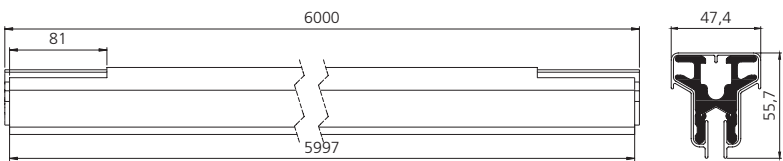
1300A



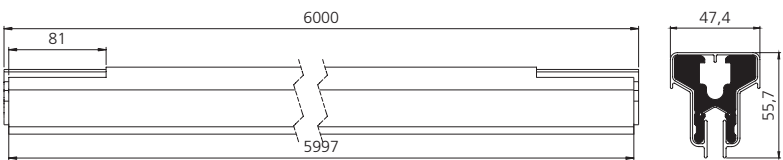
900A



1100A



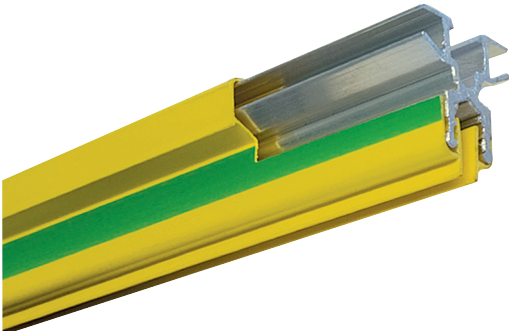
1300A



Insulated conductor rail earth

CODE	LOAD (A)	L (m)	COLOUR	WEIGHT (kg/m)
03.09606.90T	900	6	yellow/green	1,58
03.09607.90T	1100	6	yellow/green	2,04
03.09608.90T	1300	6	yellow/green	2,50

Earth



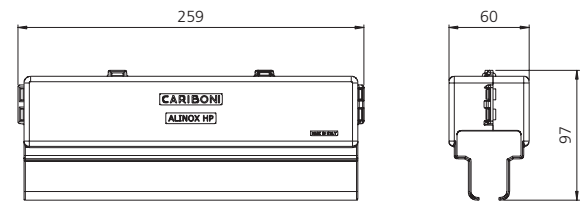
Joint clamp, feeder clamp, expansion joint

15 Joint clamp 900-1100-1300 A

FEATURES:

It is composed by an insulating sheath and by an Al joint clamp used to realize electric and mechanical connection of two contiguous rails. Bolts and nuts are of stainless steel.

CODE	WEIGHT (kg/pc)
03.09660.90	0,74

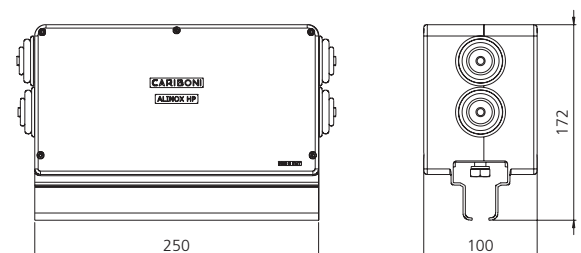


16 Feeder clamp 900-1100-1300 A

FEATURES:

It is composed by an insulating sheath and by an Al joint clamp used to realize electric and mechanical connection of two contiguous rails, and it has also function of feeding. Bolts and nuts are of stainless steel.

CODE	WEIGHT (kg/pc)
03.09670.90	1,53



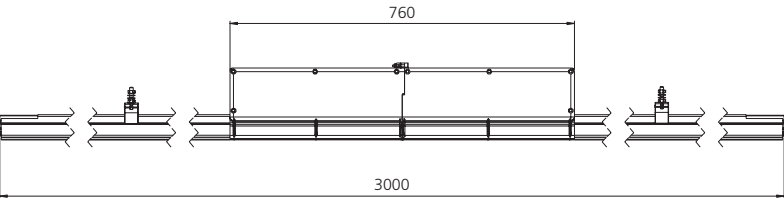
17 Expansion joint

FEATURES:

The expansion joint has to be used in case of significant temperature variations and in any case for systems longer than 180 m. It is used to compensate the linear expansion of the line, avoiding possible deformations. It is composed by two sliding pieces of rail, supported by two support hangers and two feeder clamps connected by an electric flexible cable.



CODE	DESCRIPTION	LOAD (A)	L (m)	CONDUCTOR	COLOUR	WEIGHT (kg/pc)
03.09675.90	Standard	900 1100 1300	3	Phase	orange	15
03.09675.90T	Standard		3	Earth	yellow/green	15
03.09675.90AT	High temperature		3	Phase	white	15

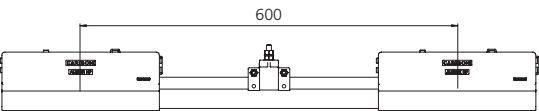
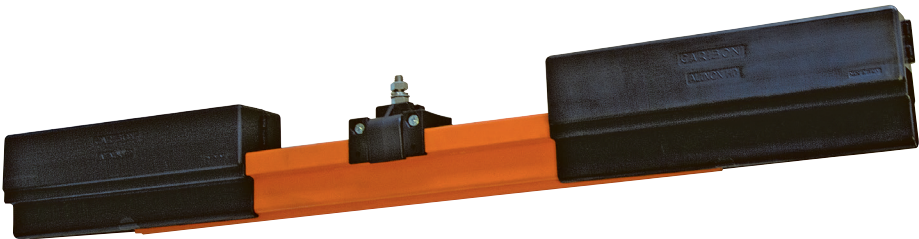


18 Section joint

FEATURES:

It is used to electrically divide sections of the line, in order to realize parking areas of the machines for the maintenance or for signalling. The section joint has not to be installed on the conductor rail for earth, which cannot be divided. In correspondance with the axis of section an additional support bracket must be added. The section joint is supplied with two joint clamps and the support hanger.

CODE	WEIGHT (kg/pc)
03.09680.90	2,5



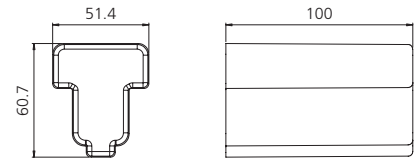
Insulated end cap, fixed point hanger & support hanger

19 Insulated end cap

FEATURES:

It used to insulate the extremities of the line.

CODE	LOAD (A)	COLOUR	WEIGHT (kg/pc)
72.10008.42	900/1100/1300	black	0,02

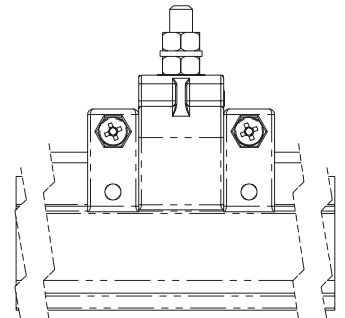
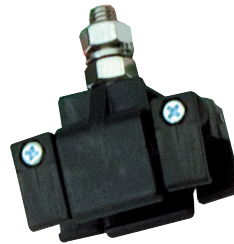


20 Fixed point hanger

FEATURES:

The fixed point hanger, made of insulating material, is used to share the expansions of the rails. It is composed by a couple of clamps put across a support hanger.

CODE	HARDWARE	COLOUR	WEIGHT (kg/pc)
03.09666.90	Stainless steel	black	0,1

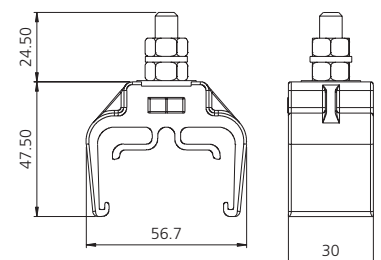
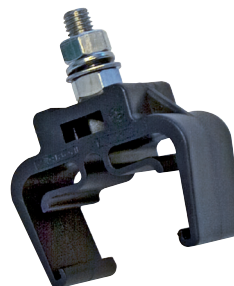


21 Support hanger

FEATURES:

It is used to hold the rails and at the same time to allow their sliding, due to the thermic expansion. It's made of insulating material and easily applied "by click" on the rail with a max. distance of 3 m.

CODE	HARDWARE	COLOUR	WEIGHT (kg/pc)
03.09665.90	Stainless steel	black	0,055



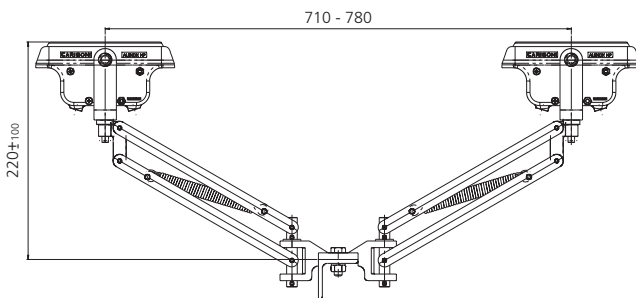
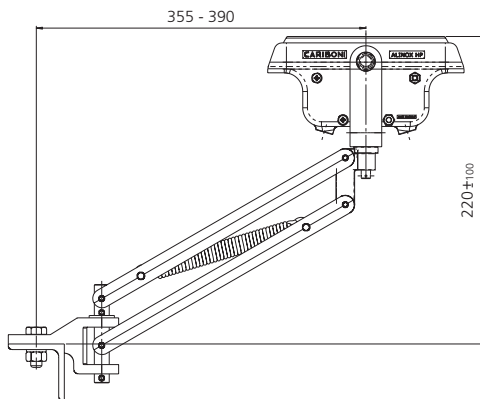
Current collector

22 Current collector

FEATURES:

The current collector is available in two versions; single or double; it's flexible, in order to compensate eventual displacements due to the movement of the mobile machine, guaranteeing the optimal contact on the rail. The contact shoe is made of Cu alloy protected by an insulating cover and can be easily replaced. Max section of derivation cables: two of 25 mmq.

CODE	TYPE	LOAD*	WEIGHT (kg/pc)
03.09690.90	Simple	200 A	1,750
03.09690.90T	Simple	200 A	1,750
03.09691.90	Double	400 A	3,400
03.09691.90T	Double	400 A	3,400

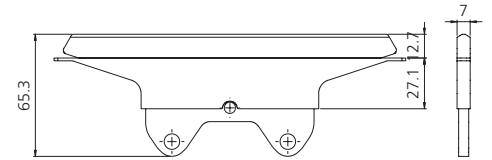


(*) For current collectors moving at low speed or standing still the maximum amperage must be 50% of the indicated value or else the current collector duty cycle must be 50% (time cycle 5 minutes).

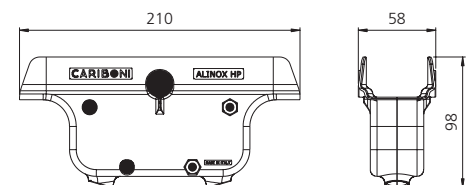
Spare parts: Contact shoe & insulated shoe holder

23 Contact shoe

CODE	WEIGHT (kg/pc)
03.09695.90	0,250

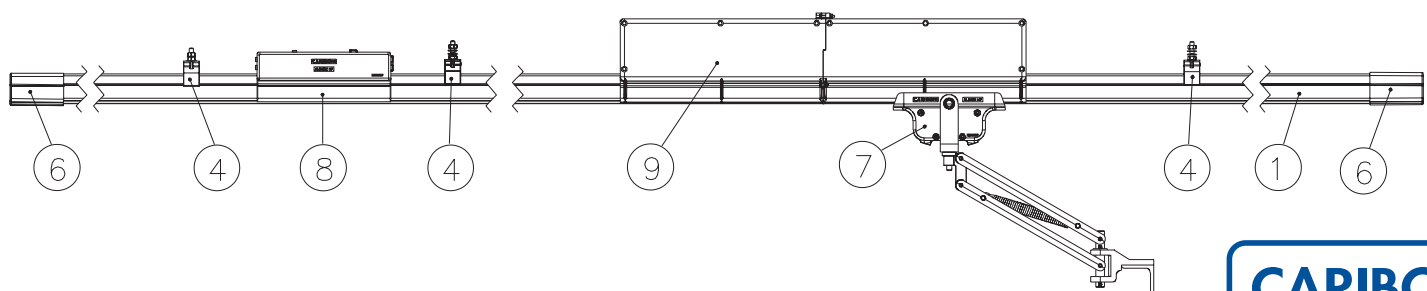
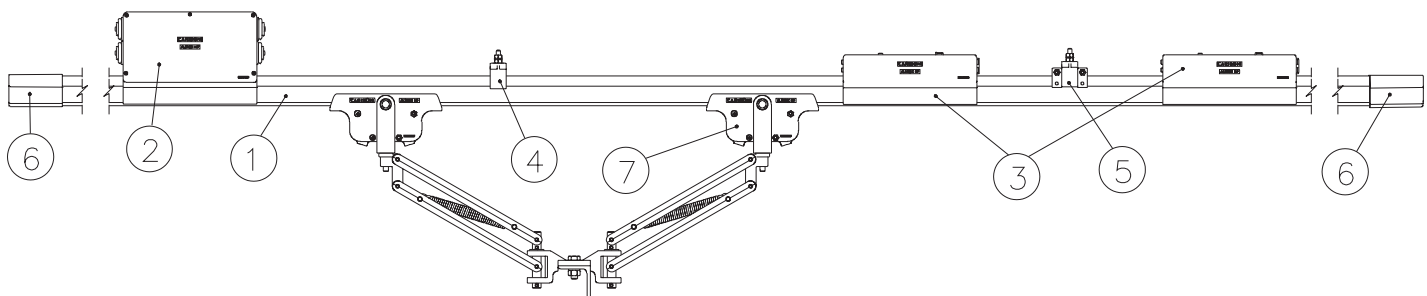
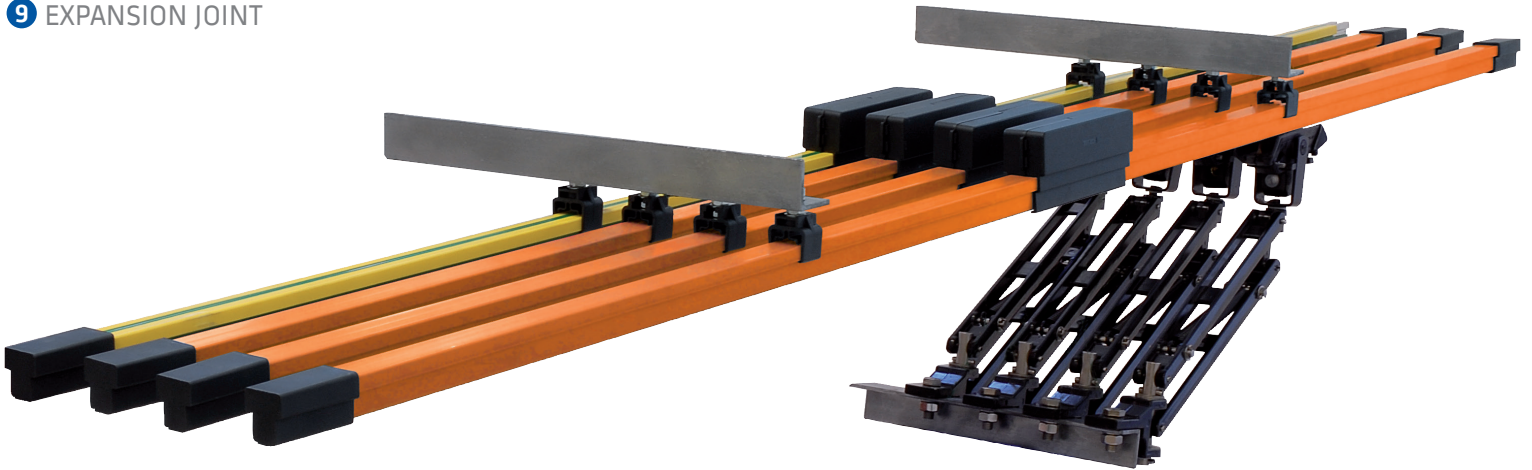
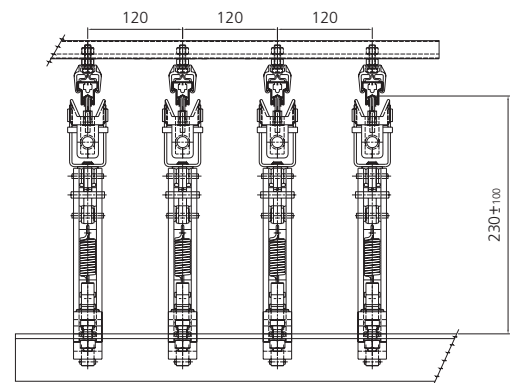
**24** Insulated shoe holder

CODE	WEIGHT (kg/pc)
03.09698.90	0,150



Example of a possible installation

- ❶ INSULATED CONDUCTOR RAIL
- ❷ FEEDER CLAMP
- ❸ SECTIONALIZING JOINT
- ❹ SUPPORT HANGER
- ❺ FIXED POINT HANGER
- ❻ END CAP
- ❼ SIMPLE AND DOUBLE CURRENT COLLECTOR
- ❽ RIGID JOINT CLAMP
- ❾ EXPANSION JOINT





Certificat

Certificate

N° 2012/43392.3

AFNOR Certification certifie que le système de management mis en place par :
AFNOR Certification certifies that the management system implemented by:

ALSTOM FERROVIARIA Spa

pour les activités suivantes :
for the following activities:

CONCEPTION, FABRICATION DE SYSTEMES DE RAILS CONDUCTEUR.
CONCEPTION ET FABRICATION D'ACCESSOIRES POUR LIGNES ELECTRIQUES BT-MT-HT,
COMPOSANTS ET SYSTEMES POUR LA TRACTION ELECTRIQUE.
CONCEPTION ET FABRICATION D'EQUIPEMENTS DE PROTECTION ET MANOEUVRE BASSE TENSION.

PROGETTAZIONE, FABBRICAZIONE DI LINEE DI ALIMENTAZIONE ELETTRICA TRAMITE ROTAIA.
PROGETTAZIONE E FABBRICAZIONE DI ACCESSORI PER LINEE ELETTRICHE IN BT-MT-AT,
DI COMPONENTI ED IMPIANTI PER TRAZIONE ELETTRICA.
PROGETTAZIONE E FABBRICAZIONE DI APPARECCHIATURE DI PROTEZIONE
E MANOVRA PER BASSA TENSIONE.

DESIGN, MANUFACTURING OF CONDUCTOR RAIL SYSTEMS.
DESIGN AND MANUFACTURING OF ACCESSORIES FOR LV-MV-HV ELECTRICAL LINES,
COMPONENTS AND SYSTEMS FOR ELECTRIC TRACTION.
DESIGN AND MANUFACTURING OF LOW-VOLTAGE PROTECTION AND CONTROL EQUIPMENT.

a été évalué et jugé conforme aux exigences requises par :
has been assessed and found to meet the requirements of:

ISO 9001 : 2008

et est déployé sur les sites suivants :
and is developed on the following locations:

Via Roma 14 - 23855 PESCATO - ITALIA

Ce certificat est valable à compter du (arrêté/mois/jour)
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2017-03-23

Jusqu'au
Until

2018-04-10

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Franck LEBEUGLE
Directeur Général d'AFNOR Certification
Managing Director of AFNOR Certification

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