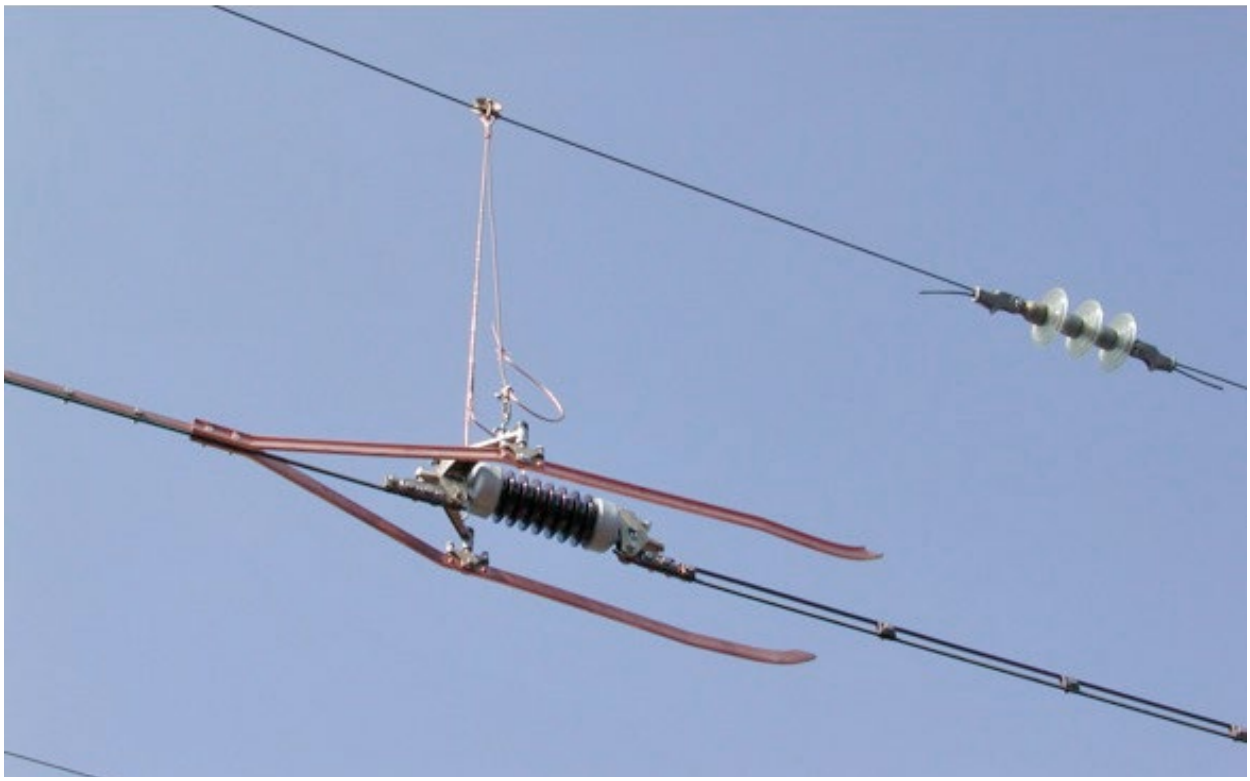
COMPANY MAIN TOPIC [PRODUCT]

TracFeed® STR

English

Section Insulators

Made in Germany



TracFeed® STR SECTION INSULATOR FOR CATENARY SYSTEMS OF MAINLINE AND MASS TRANSIT RAILROADS

For decades, Rail Power Systems has been developing and producing TracFeed® catenary products in close collaboration with customers and partners. TracFeed® products are approved in many countries for mainline and mass transit traffic system operators, and have proven themselves over many years of deployment under the most varied conditions.

Section insulators in electrical railway systems enable disconnection of feed sections of the catenary. As a rule, section insulators are installed in railway stations and at turnouts.

Section insulators are also installed for conversion work on catenary systems. The installation enables existing switching sections to be divided into individual sections. Thus for installation tasks and for construction work, the disconnected sections can be switched off individually or for a longer period of time.

Thanks to their modular structure, the TracFeed® STR section insulator product families developed by Rail Power Systems offer many customisation possibilities for addressing special customer requirements.

TracFeed® STR section insulators can be installed directly in the catenary in just a short time. The suspension enables easy regulation of the installation position.

Not least due to their sturdy design and the choice of materials, Rail Power Systems TracFeed® STR section insulators have a very long expected service life and require minimal maintenance costs.

DESIGN PRINCIPLE AND PRODUCT CONCEPT

TracFeed® STR section insulators are modularly structured and consist of the following basic components:

- Insulators
- Interface for contact wire
- Skids
- Arcing horns

The insulators, which in conjunction with the appropriate fittings ensure the transmission of tension forces from the contact wire, constitute the heart of the Rail Power Systems TracFeed® STR section insulator. In this regard, insulators made of ceramic, composite material or GFRP bars are used.

The section insulators are available in versions for one or two contact wires. This means that high tension forces can be absorbed. TracFeed® STR can be used in automatic, as well as fix-tensioned catenary systems. Applications for low system heights are also possible.

Consistent use of corrosion-resistant materials, such as copper, copper alloys, or stainless steel, guarantees a long service life and minimal maintenance costs. Moreover, use of water-repellent composite material isolators reduces the maintenance costs, which were minimal to begin with, and offers increased protection against vandalism.

Materials

Arcing horns	Electrolyte copper
Isolators	Composite or Ceramic
Contact set	Electrolyte copper
Insulator fittings	Steel
Standard parts	Stainless steel
Anchor clamp	Bronze

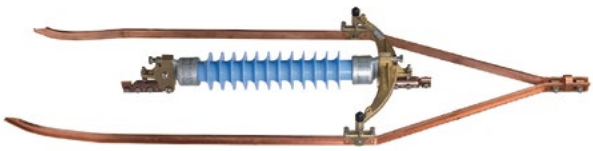
Depending on the design, the TracFeed® STR section insulators are designed and proven for maximum speed for pantograph passage up to 130 km/h. In this case, the use of solid, durable materials takes priority over a lightweight design, because in this speed range, the influence of the section insulator weight on the dynamic interaction between pantograph and catenary can be ignored. The contact pressure of the pantographs should be between 70 N and 120 N.

Nevertheless, the adoption of lighter materials and the optimisation of materials used result in a significant reduction of the section insulator weight. Thus handling and installation of the TracFeed® STR section insulators is made easier.

Wear parts, such as skids and spark horns, can be quickly and easily replaced, if necessary. In doing so, it is not necessary to remove the section insulator.

SECTION INSULATOR 25 KV

Order number		3EGF017345	3EGF010805	3EGF010806	3EGF010807	3EGF010808
Nominal voltage	V AC	25 000	25 000	25 000	25 000	25 000
Insulators		Composite	Composite	Composite	Composite	Composite
Minimum creepage distance	mm	1 210	600	760	1 120	1 210
Air gap	mm	170	190	190	190	190
Arcing horns		Yes	No	No	No	No
Rated withstand voltage	kV	150	160	160	160	160
Rated power withstand voltage, wet	kV	70	80	80	80	80
Contact wire cross section	mm²	80 – 150	80 – 150	80 – 150	80 – 150	80 – 150
Shields		13	6	6	12	13
Distance – eye-to-eye insulator	mm	-	535	680	750	790
Overall length +/ – 10	mm	2 005	1 710	1 810	2 005	2 005
Weight	kg	35	28.5	30.0	32.0	32.5
Max. operating force	kN	30	30	30	30	30
Minimum braking load with supplemental lever (80 mm)	kN	90	90	90	90	90
Max. speed for pantograph passage	km/h	130	130	130	130	130
Number of pantograph passages without maintenance	mil	2	2	2	2	2
References in		USA/Denver DTP			Greece/OSE	Malaysia / KTMB Turkey/ TCDD



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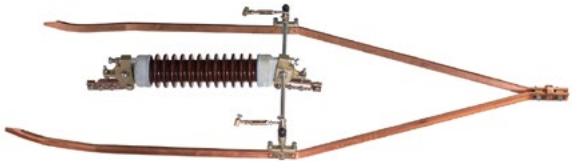


3EGF007542

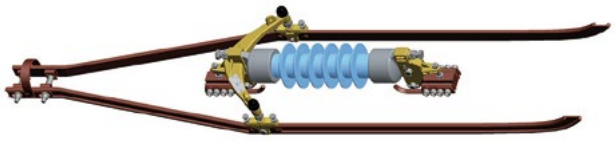
SECTION INSULATOR 25 KV (BAR CONSTRUCTION)

Section Insulator arrangement in Denver/USA

Order number		3EGF007541	3EGF007542
Nominal voltage	V AC	25 000	25 000
Insulators		Ceramic	Ceramic
Minimum creepage distance	mm	725	1210
Air gap	mm	190	305
Rated withstand voltage	kV	160	320
Rated power withstand voltage, wet	kV	80	160
Contact wire cross section	mm²	80 – 150	80 – 150
Shields		12	13
Distance – eye-to-eye insulator	mm	597	790
Overall length +/ – 10	mm	1 810	2 005
Weight	kg	31	32.5
Max. operating force	kN	30	30
Minimum breaking load with supplemental lever (80 mm)	kN	90	90
Max. speed for pantograph passage	km/h	130	130
Number of pantograph passages without maintenance	mil	2	2
References in		Great Britain/ Network Rail	Finland/ VR Track

SECTION INSULATOR 15 KV

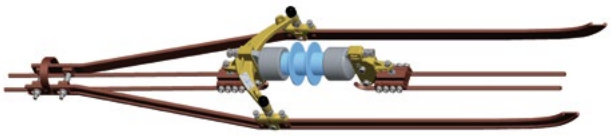
Order number		3EGF010628	3EGF007890	3EGF001880	3EGF001831	3EGF001832
Nominal voltage	V AC	15 000	15 000	15 000	15 000	15 000
Insulators		Composite	Ceramic	Composite	Ceramic	Ceramic
Minimum creepage distance	mm	615	540	615	420	-
Air gap	mm	115	105	120	105	-
Rated withstand voltage	kV	100	93	106	93	-
Rated power withstand voltage, wet	kV	50	47	53	47	-
Contact wire cross section	mm²	80 – 150	80 – 150	80 – 150	80 – 150	80 – 150
Number of contact wires		2	1	1	1	1
Number of shields		6	9	6	7	9
Distance – eye-to-eye insulator	mm	535	500	535	436	500
Overall length +/ – 10	mm	1 840				
Weight	kg	30	16.5 + 12.2	26.5	26.4	28.0
Max. operating force	kN	30	30	30	30	30
Minimum breaking load with supplemental lever (80 mm)	kN	90	90	90	90	90
Max. speed for pantograph passage	km/h	130	130	130	130	130
References in		Germany/ DB AG	Germany/ DB AG	Germany/ DB AG	Germany/ DB AG	Germany/ DB AG



3EGF010628

SECTION INSULATOR 3 KV

Order number		3EGF010893	3EGF011159	3EGF010639	3EGF015682
Nominal voltage	V DC	3 000	3 000	3 000	3 000
Insulators		Composite	Composite	Composite	Composite
Minimum creepage distance	mm	250	250	500	500
Rated withstand voltage	kV	85	85	85	85
Rated power withstand voltage, wet	kV	25	25	25	25
Contact wire cross section	mm²	2x (80 – 150)	1x (80 – 150)	1x (80 – 150)	1x (80 – 150)
Shields		2	2	-	-
Distance – eye-to-eye insulator	mm	360	360	-	-
Overall length +/ – 10	mm	1 840	1 595	1 500	1 500
Weight	kg	27.9	24.5	13.5	12.8
Max. operating force	kN	30.0	30.0	15	15
Minimum breaking load with supplemental lever (80 mm)	kN	90.0	90.0	45	45
Max. speed for pantograph passage	km/h	130	130	100	100
References in		Ireland/ Irish Rail Brazil/ CPT Sao Paulo	Ireland/ Irish Rail Brazil/ CPT Sao Paulo	Ireland/ Irish Rail	



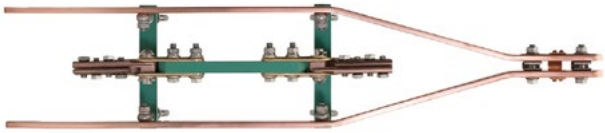
3EGF010893

3EGF015682

SECTION INSULATOR 1.5 KV TO 3 KV

Order number		3EGF011680	Other types on request
Nominal voltage	V DC	1 500	
Insulators		Composite	
Minimum creepage distance	mm	60	
Contact wire cross section	mm²	80 – 120	
Overall length	mm	1 040	
Weight	kg	13	
Max. operating force	kN	15	
Minimum breaking load with supplemental lever (80 mm)	kN	45	
Max. speed for pantograph passage	km/h	100	
References in		Turkey/Eskisehir, Istanbul Germany/Karlsruhe, Saarbrücken, Dortmund	

3EGF011680



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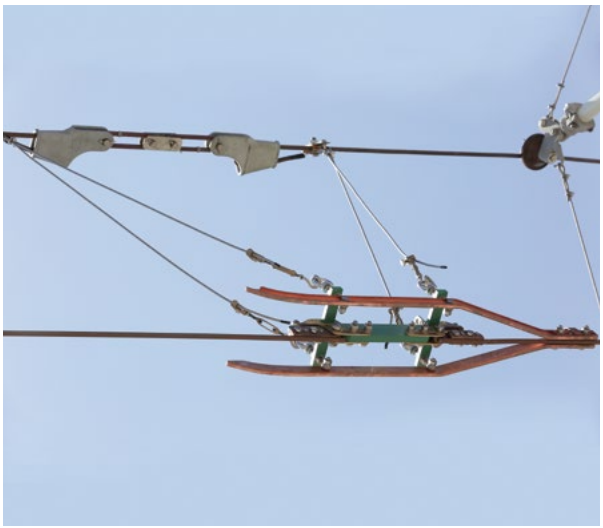


SUSPENSION AND CONTACT WIRE BRACING FOR TracFeed® STR FAMILY 3 KV TO 25 KV

Contact wire bracing

Accessories:

- Contact wire bracing
- Suspension on the messenger wire – fixed and movable from 35 mm² – 95 mm²
- Suspension on the linear guide – for messenger wire from 35 mm² – 253 mm²

Part	Order number	Description	Material
1	3EGF001828	Pulley	Copper alloy
2	3EGF002724	Wire 4.0 CU DIN 46431	Copper
3	3EGF001819	Turnbuckle M8	Copper alloy
4	3EGF001834	Shrink hose	
5	3EGF002798	Joint terminal	
6	as required	Contact wire	
7	on request	Wedge-end terminals/ conical anchor terminals	

3EGF001828

3EGF002798

on request

Why TracFeed® components from Rail Power Systems?

To put it simply: because you can be certain of overwhelming benefits with catenary components from Rail Power Systems. They are suitable for both standard solutions and for tailored, customer-specific operating concepts in mainline and mass transit railroads. Whether you purchase clamps for cables and wires, aluminium components for cantilevers, wheel tensioners, or motor drives from Rail Power Systems, all catenary elements that we supply provide advantages that you can also implement with with our section insulator models. These include:

- Long service life
- High reliability in daily operation
- Low lifetime costs
- Outstanding quality
- Safe use in the widest range of climates and operating conditions

Contact us if you have any questions about our products. We would also be pleased to provide you with detailed information and, on request, present our entire delivery programme with all product lines for contact wire components, for example TracFeed® ALU1000, 2000, 3000, TracFeed® OSS overhead conductor rails and TracFeed® STS conductor rail systems.

Fundamental testing included

Technical components from Rail Power Systems are designed and factory-tested in accordance with the standard EN 50119.

In addition, traditional random testing also takes place during the production process. In order to further increase the quality and value for our customers, we perform additional, extensive routine tests in the course of the production. This includes the following areas:

- Dimensional and tolerance testing
- Testing of mechanical connections
- Mechanical operation testing
- Electrical operation testing

Quality, made in Germany

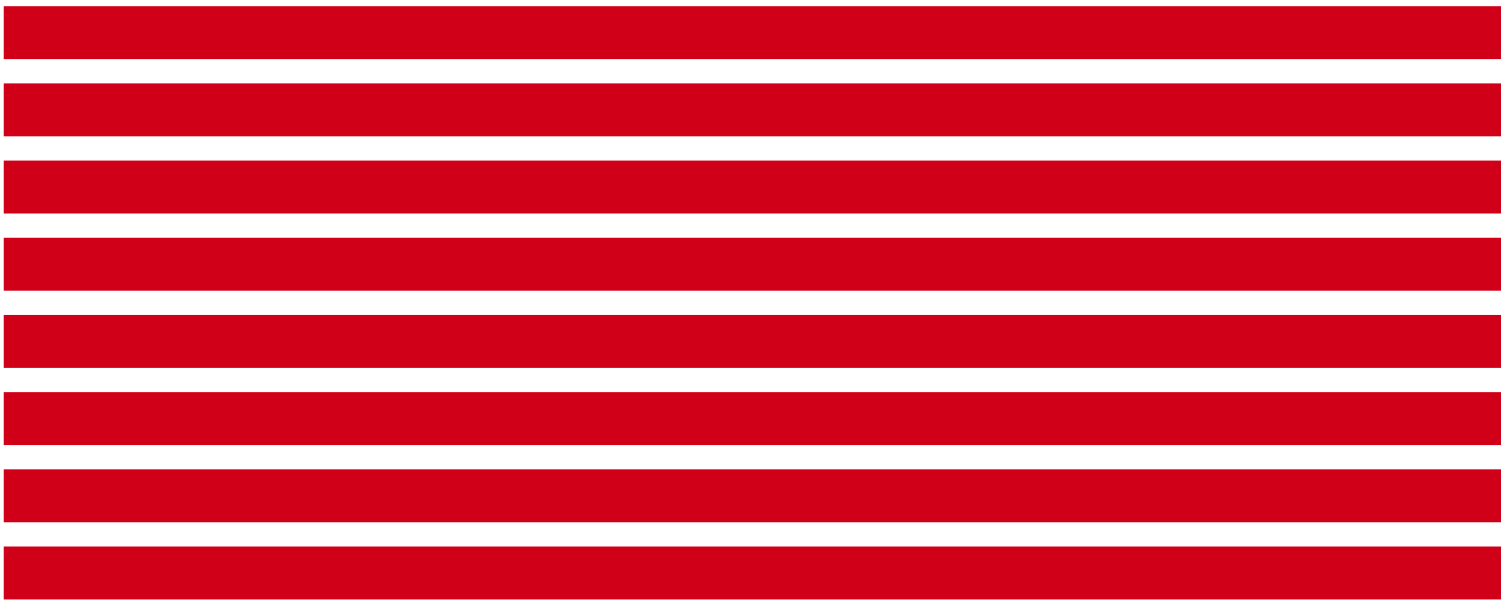
Rail Power Systems TracFeed® catenary components are manufactured in our Munich production facility.

Quality, used worldwide

Rail Power Systems TracFeed® catenary products are used all over the world.

The TracFeed® STR section insulators are used in the following countries, among others, by mass transit and mainline traffic operators:
Germany, Great Britain, Greece, Turkey, Ireland, Norway, Finland, Brazil, Malaysia.

RPS/EN/416/0916



The specifications set out in this document apply to popular applications. They do not represent performance limits. This means that divergent specifications may be attained in specific applications. The contractually agreed specifications alone shall apply. We reserve the right to effect technical modifications. TracFeed® is a registered trademark of Rail Power Systems GmbH.

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