

# Railway cable accessories



## Linking the future

As the worldwide leader in the cable industry, Prysmian Group believes in the effective, efficient and sustainable supply of energy and information as a primary driver in the development of communities.

With this in mind, we provide major global organisations in many industries with best-in-class cable and accessory solutions, based on state-of-the-art technology. Through two renowned commercial brands - Prysmian and Draka - based in almost 50 countries, we're constantly close to our customers, enabling them to further develop the world's energy and telecoms infrastructures, and achieve sustainable, profitable growth.

In our energy business, we design, produce, distribute and install cables and systems for the transmission and distribution of power at low, medium, high and extra high voltage.

In telecoms, the Group is a leading manufacturer of all types of copper and fibre cables, systems and accessories - covering voice, video and data transmission.

Drawing on over 130 years' experience and continuously investing in R&D, we apply excellence, understanding and integrity to everything we do, meeting and exceeding the precise needs of our customers across all continents, at the same time shaping the evolution of our industry.



## What links global expertise to the wheels of industry?

High-performing cable solutions to keep the wheels of industry turning.

As the world leader in cabling, we draw on global expertise and local presence to work in close proximity with our customers, delivering products and service platforms built on easy contact, bespoke solutions and effective supply chain, meeting their specialised requirements, to help them drive the wheels of industry and achieve sustainable growth and

profitability. On every continent, in applications that range from rolling stock and vehicles for high-speed trains and urban mass transit lines, to all types of rail transport infrastructure, Prysmian's specialist cable solutions sit at the heart of significant international projects; supporting the work of major customers, with high-performing, durable and safe technology.

Prysmian Group's dedicated Components facility based in Wrexham, Wales manufactures and supplies the market with products which are widely used in industrial, commercial and domestic power distribution systems. In addition it offers products for more specialist applications such as Utilities, Railways, Oil, Gas and Petrochemical, Hazardous Areas, Wind and Solar Energy. Today's BICON® product ranges represent over 100 years of cable accessory development and quality engineering building on the pedigree of our previous company names - going back

to BICC. Of course Prysmian Group's Components products are the perfect installation accessory for the Company's vast range of quality, approved cables.

Prysmian Group's comprehensive component product range includes:



- BICON® Cable Glands
- BICON® Cable Cleats
- BICAST® Joints & Terminations
- BICON® Connectors and Tooling
- Flexo® Modular Power Systems
- Flexo® Rail products
- JEM™ Resin
- Connecta System®

From its UK base, Prysmian Group's Components is able to efficiently service the needs of its UK and overseas customers and offers a high level of pre-sales and post-sales customer service.

For further information please contact:

International Sales Office: +44 2380 295481  
[www.biconcomponents.co.uk](http://www.biconcomponents.co.uk)

## Flexo

Prysmian Group's Components business, based in Wrexham, is a leading manufacturer of railway cable accessories and offers a range that is both comprehensive and diverse. Through many years of industry experience and working closely with our customers, Prysmian Group is able to offer railway cable accessories to join, support, terminate and fix all cable types on the market.

Our accessory range has been designed and tested with Prysmian Groups comprehensive cable products and is recommended as the preferred method of installation.

The Flexo® moulded product range has been used throughout the rail network for over thirty years and their reliability is unsurpassed. The Prysmian Group's dedicated engineering teams have experience over many years in providing innovative design solutions for varied

specialist applications in the railway industry. Based on pre-terminated, moulded technologies, these designs have only one aim: To provide simple, fast assembly electrical connection systems which reduce installation time and cost whilst maximising system safety and reliability.

No matter how complex the connections, Flexo® products are designed and manufactured to allow fast installation whilst eliminating the possibility of connection error, and ensuring that the right connections are made first time, every time. Products are designed to survive environments of vibration, ice, dust, water, abrasions or extreme heat ensuring that Flexo® products will provide lasting and reliable connections.

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# Track circuit leads

## Pre-terminated track connection cables.

### Applications

There are different types of track circuit leads available:

- Conventional track circuit: Catered for with the 2.5mm<sup>2</sup> C1 and 2.5mm<sup>2</sup> E1 type leads.
- Track Circuit (Jointless): Such as 'Aster' and 'TI21' are catered for with the 35mm<sup>2</sup> C1 and 70mm<sup>2</sup> leads.
- Rail Bonding (Yellow): Catered for with the 35mm<sup>2</sup> leads identified by yellow sleeving.
- Rail Bonding (Stud Connections): Catered for with the 2.5mm<sup>2</sup> C1 leads.

### Features and Benefits

Our Flexo track circuit leads deliver cost savings in signalling installation and maintenance projects, by providing factory tested quality assurance whilst reducing installation times. The single core cables are supplied with a factory moulded termination at one or both ends. The terminations that are moulded in neoprene provide excellent vibration protection for the electrical connection. Designed to hug the rail web tightly, track circuit lead fixings are at 76mm centres and designed for use with the rail industry standard taper pins. The track circuit leads have twin connections, providing fail safe, long term reliability. A 100% test regime is rigorously employed and every lead is electrically tested in our factory.

All products can be supplied in non-standard, project specified lengths if required. Please contact us for more detail.

### Specification and approvals

Prysmian Track Circuit Cable Assemblies comply with the design and performance requirements of the Network Rail standard GK/RT 0301 (where applicable).

#### Cables:

- C1 and E1 type cables comply with RT/E/PS/00005
- 35mm<sup>2</sup> CSP sheathed cable complies with BS 7919
- 70mm<sup>2</sup> CSP sheathed cable complies with BS 638

## Technical Data

End Type	
End type A	Moulded 2 hole (L bracket) 2 x 7mm Ø
End type B	Moulded single hole
End type C	Heatshrink lug std
End type D	Heatshrink lug Waterblocked
End type E	Free end

TRACK CIRCUIT LEADS										
Type	Conductor CSA	Cable Type	Strands (Qty/CSA)	Cable Colour	Length (m)	End Type 1	End Type 2	Single Hole Ø (mm)	Prysmian Part No.	PADS Cat. Number
2.5mm <sup>2</sup>										
Double Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	0.85	-	-	-	W91910201	086/044037
Double Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	1.2	-	-	-	W91910302	086/044038
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	3.0	A	E	-	W91600302	086/044022
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	4.5	A	E	-	W91600506	086/044023
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	6.5	A	E	-	W91600705	084/044024
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	8.0	A	E	-	W91600807	086/044025
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	9.5	A	E	-	W91601019	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	10.0	A	E	-	W91601009	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	12.0	A	E	-	W91601233	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	15.0	A	E	-	W91601510	086/044031
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	16.0	A	E	-	W91601614	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	17.5	A	E	-	W91601820	086/044029
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	20.0	A	E	-	W91602012	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	25.0	A	E	-	W91602529	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	30.0	A	E	-	W91603008	086/044026
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	32.0	A	E	-	W91603213	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	35.0	A	E	-	W91603534	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	45.0	A	E	-	W91604524	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	50.0	A	E	-	W91605015	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	55.0	A	E	-	W91605530	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	60.0	A	E	-	W91606031	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	75.0	A	E	-	W91607532	-
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	80.0	A	E	-	W91608016	-
Single Ended	2.5mm <sup>2</sup>	E1 LSOH	50/0.25	Black	4.5	A	E	-	W91600517	-
Single Ended	2.5mm <sup>2</sup>	E1 LSOH	50/0.25	Black	6.5	A	E	-	W91600721	-
Single Ended	2.5mm <sup>2</sup>	E1 LSOH	50/0.25	Black	8.0	A	E	-	W91600822	-
Single Ended	2.5mm <sup>2</sup>	E1 LSOH	50/0.25	Black	9.5	A	E	-	W91601018	-
Single Ended	2.5mm <sup>2</sup>	E1 LSOH	50/0.25	Black	30.0	A	E	-	W91603023	-
35mm <sup>2</sup>										
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	0.5	A	C	10	W91610110	086/044112
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	1.2	A	C	10	W91610101	086/044103
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	1.2	D	D	10	93370101	086/046979
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	1.5	D	D	10/12	93360202	086/046920
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	1.7	A	C	10	W91610207	086/044040
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	2.1	D	D	10/12	93360201	086/46922
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	2.1	D	D	10	93370202	086/046997
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	2.8	D	D	10/12	93360303	086/046921
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	2.9	A	C	10	W91610308	086/044041
Double Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	3.0	A	C	10	W91610303	086/044102
Single Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	3.0	A	E	-	W91620301	086/044155
Single Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	4.5	A	E	-	W91620402	086/044154
Single Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	6.5	A	E	-	W91620603	086/044153
Single Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	8.0	A	E	-	W91620804	086/044152
Single Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	30.0	A	E	-	W91623005	086/044151
Single Ended	35mm <sup>2</sup>	CSP Sheath Cable		Black	40.0	A	E	-	W91624006	-

TRACK CIRCUIT LEADS										
Type	Conductor CSA	Cable Type	Strands (Qty/CSA)	Cable Colour	Length (m)	End Type 1	End Type 2	Hole Ø (mm)	Prysmian Part No.	PADS Cat. Number
70mm <sup>2</sup>										
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	3.0	A	C	10	W91610351	086/44101
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	4.8	A	C	10	W91610552	086/44100
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	4.4	C	D	10	93300301	086/10061
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	4.7	C	D	10	93300502	086/10062
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	11.4	C	D	10	93301003	086/10063
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	11.7	C	D	10	93301204	086/10064
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	3.2	C	D	10/12	93320301	086/46975
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	4.5	C	D	10/12	93320402	086/46976
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	3.2	A	C	10	93340301	086/46898
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	4.6	A	C	10	93340502	086/46899
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	10.2	A	C	10	93341003	086/46900
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	11.6	A	C	10	93341204	086/46901
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	10.2	C	D	10/12	93321003	086/46977
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	11.5	C	D	10/12	93321204	086/46978
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	10.0	A	C	10	W91611056	086/010059
Double Ended	70mm <sup>2</sup>	CSP Sheath Cable	-	Orange	11.8	A	C	10	W91611257	086/010060
RAIL BONDING STUD CONNECTION LEADS										
Type	Conductor CSA	Cable Type	Strands (Qty/CSA)	Cable Colour	Length (m)	End Type 1	End Type 2	Hole Ø (mm)	Prysmian Part No.	PADS Cat. Number
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	3.0	B	E	13	W91710301	086/044042
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	4.5	B	E	13	W91710402	086/044043
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	6.5	B	E	13	W91710603	086/044044
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	8.0	B	E	13	W91710804	086/044045
Single Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	30.0	B	E	13	W91713005	086/044046
Double Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	0.9	B	B	13	W91720101	086/044048
Double Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	1.2	B	B	13	W91720102	086/044049
Double Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	1.6	B	B	13	W91720203	086/044047
Double Ended	2.5mm <sup>2</sup>	C1 Neoprene	50/0.25	Black	3.0	B	B	13	W91720304	086/044039
TRACK CIRCUIT RAIL FASTENING KITS										
Type	Type	Notes							Prysmian Part No.	PADS Cat. Number
Kit 1	2.5mm <sup>2</sup>	Includes clip, taper pins & fasteners for 2.5mm <sup>2</sup> cable							W49980043	086/44017
Kit 2	2.5mm <sup>2</sup>	Includes taper pins & fasteners for 2.5mm <sup>2</sup> cable							W49980060	-
Kit 3	3.5mm <sup>2</sup> cable & 70mm <sup>2</sup>	Includes clip, taper pins & fasteners for 3.5mm <sup>2</sup> cable & 70mm <sup>2</sup> cable							W49980064	-



## Disconnect Boxes

### Applications

The Flexo range of trackside disconnection boxes is compatible with a variety of applications, including Clamplock, Track Circuit, AWS TCAID and Level Crossing Treadle.

The unique design incorporates a hard neoprene moulded back plate, with sliding steel cover providing excellent accessibility. The rail bonding (stud Connections) are catered for with the 2.5mm<sup>2</sup> C1 leads. With the cover removed, access to the internal terminals is available on all sides. The cover itself is epoxy coated to resist corrosion and includes the facility for security padlocking. The moulded cable nesting grooves simplifies installation as no traditional glands are required.

### Features and Benefits

The design principles applied ensure that every unit exceeds the performance requirements. Specifically, the threaded inserts are fully bonded to the neoprene to ensure integrity. They are manufactured from high grade brass to guarantee long life. The covers are exceptionally tough and corrosion resistant. The neoprene body ensures that vibration degradation is eliminated ensuring that terminations will not fracture.

### Installation

Cable entry is simplified by the provision of moulded nesting grooves to suit individual applications. The cables are secured by means of a full width clamp/brush sealing arrangement requiring a single allen key only. This facilitates rapid assembly and allows cable routings to be checked quickly and easily. The boxes are designed to be used with cables requiring terminating on site or with certain products from the range of Prysmian pre-terminated detection system cables.

### TRACKSIDE DISCONNECT BOX - ACCESSORIES

Description	Prysmian Part Number	PADS Cat. Number
Disconnect box mounting stake, standard length for normal ground conditions	RL1667/00	086/010751
Disconnect box mounting stake, long length for poor ground conditions	RL1678/00	086/088250
Disconnect box mounting stake, extra long length for very poor ground conditions	RL1721/00	086/088260
Disconnect box mounting stake, long length for TCAID applications	RL1670/00	086/088261
Post mounting kit for disconnect boxes	W49980058	086/010754
Small Stainless Steel Cover 204x111x70	RL1696/00	-



## Technical Data

TRACKSIDE DISCONNECT BOXES											
						Contact Pairs					
Size	Width	Length	Depth	No. Cable Entries	Contact block rows	Row 1	Row 2	Prysmian Part No.	PADS Cat. No.	Typical Applications	
Small	204	111	70	5	1	4	-	W91730001	086/043877	Track circuit applications, style 11211	
Small	204	111	70	5	1	4		W91740001	086/043879	TCAID-N applications, style 11111	
Small	204	111	70	2	1	4	-	W91760001	086/043880	AWS applications, style 20002	
Small	204	111	70	2	1	4	-	W91790001	-	AWS applications, style 20002B, for B2 cable entry	
Small	204	111	70	3	1	4	-	W91800001	086/043881	TCAID-N applications, style 30011	
Small	204	111	70	2	1	4	-	W91810001	086/043886	2 x 4 core cables, style 40004	
Small	204	111	70	4	1	4	-	W91830001	086/043887	Inductor, style 2222	
Small	204	111	70	2	1	3	-	W91920001	086/010761	TPWS applications, 3 way	
Small	204	111	70		1		-	W92150001			
Small Extended	229	111	70	4	1	6	-	W92190001	086/010762	TPWS applications, 6 way	
Medium	204	190	70	4	1	5	-	W91570001	086/032121	Medium disconnect box, clamplock applications	
Medium	204	190	70	6	1	4	-	W91580001	-	Medium disconnect box, diode applications	
Medium Extended	229	190	70	4	2	6	6	W91860001	-	-	
Medium Extended	229	190	70	6	2	6	6	W91870001	-	-	
Medium Extended	229	190	70	3	2	6	6	W91880001	-	-	
Medium Extended	229	190	70	4	2	4	4	W92120001	088/000502	Point machine coupler, way 4 + 4 way	
Large	350	130	75	2	1	12	-	W91890001	086/010753	-	
Large	350	130	75	4	1	12	-	W91980001	-	-	
Large	350	130	75	2	1	10	-	W92170001	-	-	
Extra Large	350	241	75	4	2	10	10	W91970001	-	-	
Extra Large	350	241	75	5	2	12	12	W92040001	-	-	
Extra Large	350	241	75	4	2	10	4	W92130001	088/000503	-	
Extra Large	350	241	75	4	2	10	4	W92130001L	-	-	
Extra Large	350	241	75	?	2	10	4	W92640001	W91611257	-	
PLUG COUPLED DISCONNECT BOXES											
Type			Width	Length	Depth	No. Cable Entries	No. Sockets	Way 1	Way 2	Prysmian Part No.	PADS Cat. No.
4+4 Hy Drive Disconnect Box			350	125	242	2	2	4	4	W91960001	-
7+7 Hy Drive Disconnect Box			350	125	242	2	2	7	7	W91950001	-
10+10 Hy Drive Disconnect Box			410	150	242	2	2	10	10	W91940001	-



## Points Machine Coupler System

### Applications

The points machine coupler provides a reliable and easy to install connection from the point machine to the disconnect box. The cornerstone of the design is a plug and socket arrangement on the point machine with pre-terminated leads on the other end. By using the Prysmian plug coupler system possession times are dramatically reduced.

- Designed for use with Prysmian Disconnect Boxes
- Low smoke, zero halogen cable version is available
- Quick and accurate connection at the disconnect box
- Satisfies the continuous drive within the rail industry for improvements to trackside electrical connections

The couplers are specially designed for use with Alstom HW points machine. Pre-terminated socket leads are available with moulded palms on the other end of the cable. They are provided in standard lengths of 5m, 10m, 15m and 20m. All products can be supplied in non-standard, project specified lengths if required. Please contact us for more detail.

### Features and Benefits

The nickel plated brass plug and socket arrangement will not deteriorate during service. The moulded plugs are made from vulcanised neoprene which is fully bonded to the cable sheath and provides a waterproof seal with excellent strain relief. A 100% testing regime is rigorously employed. Every lead is electrically tested at the factory for voltage withstand, insulation resistance and correct continuity. For safety purposes the plug & socket can only be coupled one way. Tactile locator pips ensure that the correct orientation can easily be achieved in the worst conditions therefore it is impossible to terminate incorrectly.

Available configurations include:

- Plug coupler: For fitting to the point machine. Available in 4 Way & 10 Way configurations.
- Socket coupler with free cable end: For connecting the point machine to a disconnect box. These are hard wired and available in 4 Way & 10 Way configurations.
- Socket coupler with moulded termination on cable end: For connecting the point machine to a disconnect box, quick assembly. This solution offers the speediest installation. Available in 4 Way & 10 Way configurations.

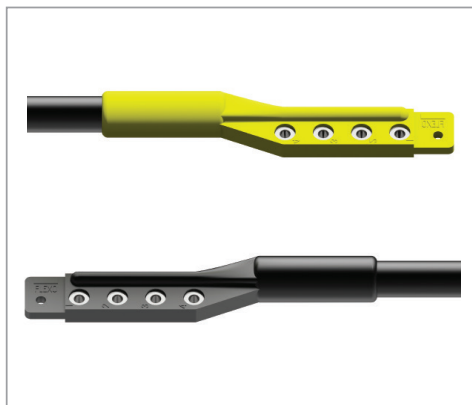
### Specification and approvals

Network Rail approval PAS05/297.

## Technical Data

PLUG ASSEMBLIES				
Description	Contacts	Tail Length (m)	Prysmian Part Number	PADS Cat. Number
Plug Coupler 4 Way	4	1	W22800101	088/000500
Plug Coupler 10 way	10	1	W22790101	088/000501
SOCKETS				
4 Way				
4 Way Socket to Free End	4	5	W22700501	088/000504
4 Way Socket to Free End	4	10	W22701002	088/000505
4 Way Socket to Free End	4	15	W22701503	088/000506
4 Way Socket to Free End	4	20	W22702004	088/000507
4 Way socket to Moulded Termination	4	5	W22870501	088/000520
4 Way socket to Moulded Termination	4	10	W22871002	088/000521
4 Way socket to Moulded Termination	4	15	W22871503	088/000522
4 Way socket to Moulded Termination	4	20	W22872004	088/000523

SOCKETS				
Description	Contacts	Tail Length (m)	Prysmian Part Number	PADS Cat. Number
4 Way				
4 Way Moulded Termination to Free End	4	5	W22890501	088/000512
4 Way Moulded Termination to Free End	4	10	W22891002	088/000513
4 Way Moulded Termination to Free End	4	15	W22891503	088/000514
4 Way Moulded Termination to Free End	4	20	W22892004	088/000515
10 Way				
10 Way Socket to Free End	10	5	W22690501	088/000508
10 Way Socket to Free End	10	10	W22691002	088/000509
10 Way Socket to Free End	10	15	W22691503	088/000510
10 Way Socket to Free End	10	20	W22692004	088/000511
10 Way socket to Moulded Termination	10	5	W22860501	088/000524
10 Way socket to Moulded Termination	10	10	W22861002	088/000525
10 Way socket to Moulded Termination	10	15	W22861503	088/000526
10 Way socket to Moulded Termination	10	20	W22862004	088/000527
10 Way Moulded Termination to Free End	10	5	W22900501	088/000516
10 Way Moulded Termination to Free End	10	10	W22901002	088/000517
10 Way Moulded Termination to Free End	10	15	W22901503	088/000518
10 Way Moulded Termination to Free End	10	20	W22902004	088/000519
DISCONNECTION BOXES FOR POINT MACHINE PLUG COUPLER SYSTEM				
4 Way	4+4	-	W92120001	088/000502
10 Way	10+10	-	W92130001	088/000503



## Detection System Cable Assemblies (Clamplock)

### Applications

Designed for use on detection circuits for various types of points switching mechanisms and other systems.

- Clamplock detector: Catered for with the 4 core, 2.5mm<sup>2</sup> C2 type leads
- 12 Core Signalling Systems: Catered for with 12 core, 2.5mm<sup>2</sup> C2 type leads
- Level Crossing Treadle Leads: Catered for with the 7 core, 2.5mm<sup>2</sup> C2 type leads and 6 core CT451 cable (when supplied with SILEC connector)

### Features and Benefits

The Flexo® detection system cable assemblies offer a fast fit, pre-terminated connection for trackside detection systems (such as clamplock point detectors). With factory moulded palms at one or both ends of the cable the key benefits are speed, reliability and high quality. Nickel plated brass eyelets are terminated to each core and encapsulated in neoprene. This ensures good electrical connection and resistance to corrosion. The neoprene moulding is fully vulcanised to the cable sheath providing a waterproof seal with excellent strain relief. The excellent inherent flexibility enables mouldings to pass through restrictions such as glands. They have excellent resistance to vibration degradation and are available in low smoke, zero halogen option.

### Specification and approvals

The detection System Cable assemblies comply with the design and performance requirements of Network Rail specification BR1974 (where applicable).

Cables: • C2 cables comply RT/E/PS/00005 • Cables supplied with SILEC connectors comply with CT451 (France).

## Technical Data

CLAMPLOCK DETECTOR LEAD								
Description	Conductor CSA (mm <sup>2</sup> )	Cable Type	Strands (Qty/CSA)	Cable Colour	Cores	Length (m)	Prysmian Part No.	PADS Cat. Number
Double Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	4	2.3	W22990301	088/002444
Double Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	4	3.3	W22990402	088/002445
Double Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	4	4.2	W22990403	088/002446
Double Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	4	7.8	W22990806	088/002454
Double Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	4	10.0	W22991007	088/002456
Double Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	4	12.0	W22991211	-
Double Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	4	15.0	W22991508	088/002455
Double Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	4	25.0	W22992512	-
SIGNALLING CABLE WITH MOULDED TERMINATION								
Single Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	12	5	W22950501	088/002443
Single Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	12	10	W22951002	088/002442
Single Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	12	15	W22951503	088/002441
Single Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	12	20	W22952004	088/002440
LEVEL CROSSING TREADLE LEADS								
Single Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	7	3	W22970301	088/044108
Single Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	7	4.5	W22970502	088/044109
Single Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	7	6.5	W22970703	088/044110
Single Ended Moulding	2.5	C2 Neoprene	50/0.25	Black	7	8	W22970804	088/044111
With SILEC Connector	1	-	-	Black	6	3	W22980302	086/044104
With SILEC Connector	1	-	-	Black	6	4.5	W22980503	086/044105
With SILEC Connector	1	-	-	Black	6	6.5	W22980704	086/044106
With SILEC Connector	1	-	-	Black	6	8	W22980805	086/044107



## Points Heating

### Applications

A plug in moulded socket block system and socket harness system for strip-type points heaters and pad and cartridge heaters.

#### Strip type point heaters:

- Catered for with the moulded block system
- 2 way, 4 way and 8 way blocks available
- Galvanised steel keep plates provide protection from accidental damage or vandalism
- 4 core 1.5mm<sup>2</sup>, 8 core 1.5mm<sup>2</sup> and 8 core 4mm<sup>2</sup> EPR/PCP cables available

#### Pad and cartridge heaters:

- Catered for with the harness system
- 2 core and 8 core harnesses available

### Features and Benefits

Points heating commissioning and maintenance becomes very fast, accurate and reliable with the application specific Flexo® systems. The Flexo® points heating moulded blocks are for use with the modern strip type heaters. The Flexo® points heating harnesses are for use with the pad and cartridge style heaters. The waterproof anti-vibration plug allows the heater element to be connected or isolated in seconds. Designed to reduce installation times to an absolute minimum e.g. the 4-heater system can be typically commissioned with just 4 minutes being spent between the rails (the block can be wired alongside the track then fed under the rail). The neoprene construction inhibits vibration degradation.

A 100% testing regime is rigorously employed. Every moulded block, harness and anti-vibration plug lead is tested for electrical continuity and voltage withstand in the factory. In addition, each moulded block and harness is subjected to a 24hr water immersion test thus guaranteeing the waterproof properties.

### Specification and approvals

The Flexo® moulded block system is fully type approved to Network Rail RT/E/S/40045 and Network Rail Type Code of Practice RT/E/S/40045. The Flexo® harness system is fully approved to Network Rail specification PS99A.

## Technical Data

POINTS HEATING BLOCK WITH MOULDED IN CABLE - FOR STRIP HEATING						
Description	Conductor CSA (mm <sup>2</sup> )	Cores	Ways	Lead Length (m)	Prysmian Part No.	PADS Cat. Number
Harness, with free end	-	2	12	-	W91471113	055/027045
Harness, with free end	-	2	13	-	W91471114	055/027046
Harness, with free end	-	2	14	-	W91471215	055/027047
Harness, back to back, with plug and rewireable socket	-	2	12	-	W91500506	055/027068
harness, back to back, with plug and rewireable socket	-	2	14	-	W91500607	055/027063
harness, back to back, with plug and rewireable socket	-	2	16	-	W91500708	055/027064
harness, back to back, with plug and rewireable socket	-	2	18	-	W91500809	055/027066
harness, back to back, with plug and rewireable socket	-	2	20	-	W91500810	055/027067
harness, back to back, with plug and rewireable socket	-	2	24	-	W91501012	055/027070
Rewireable socket, usually supplied with back to back harnesses	-	2	-	-	W90290001	055/027681
Rewireable socket, usually supplied with harnesses with moulded plug	-	8	-	-	W91290001	055/027687
Pad heater lead, with plug and box end	-	-	-	-	W91260101	055/027517
Cartridge heater lead, with plug and free end	-	-	-	0.97	W91320101	055/027582
Cartridge heater lead, with plug and free end	-	-	-	1.57	W91320207	-

## POINTS HEATING BLOCK WITH MOULDED IN CABLE - FOR STRIP HEATING

Description	Conductor CSA (mm²)	Cores	Ways	Lead Length (m)	Prysmian Part No.	PADS Cat. Number
Adapter, unfused	-	-	-	-	W91460001	055/025926
Adapter, fused	-	-	-	-	W91450001	055/025927
Blanking cap for sockets	-	-	-	-	W91480001	055/025991
Plastic spacer bush for securing outlets (Min 100)	-	-	-	-	W49990002	055/022001
Retaining clip, back to back harnesses	-	-	-	-	385AA06	055/005320
Retaining clip, heater lead	-	-	-	-	385AA02	065/051510

## POINTS HEATING HARNESS SYSTEM FOR PAD & CARTRIDGE HEATING

Harness with plug and rewirable socket	1.5	8	4	3.6	W90920404	055/026969
Harness with plug and rewirable socket	1.5	8	5	4.4	W90920405	055/026968
Harness with plug and rewirable socket	1.5	8	6	4.4	W90920506	055/026967
Harness with plug and rewirable socket	1.5	8	7	5.8	W90920607	055/026966
Harness with plug and rewirable socket	1.5	8	8	6.6	W90920708	055/026965
Harness with plug and rewirable socket	1.5	8	9	7.3	W90920709	055/026964
Harness with plug and rewirable socket	1.5	8	10	8.3	W90920810	055/026963
Harness with plug and rewirable socket	1.5	8	11	8.8	W90920911	055/026971
Harness with plug and rewirable socket	1.5	8	12	9.8	W90921012	055/026972
Harness with free end*	1.5	8	4	3.5	W91250404	055/026976
Harness with free end*	1.5	8	5	4.3	W91250405	055/026977
Harness with free end*	1.5	8	6	5	W91250506	055/026978
Harness with free end*	1.5	8	7	5.8	W91250607	055/026974
Harness with free end*	1.5	8	8	6.5	W91250708	055/026979
Harness with free end*	1.5	8	9	7.2	W91250709	055/026975
Harness with free end*	1.5	8	10	8	W91250810	055/026980
Harness with free end*	1.5	8	11	8.7	W91250911	055/027034
Harness with free end*	1.5	8	12	9.4	W91250912	055/026998
Harness with free end	6	2	4	3.7	W91470404	055/027036
Harness with free end	6	2	5	4.5	W91470405	055/027037
Harness with free end	6	2	6	5.3	W91470506	055/027038
Harness with free end	6	2	7	6.1	W91470607	055/027039
Harness with free end	6	2	8	6.8	W91470708	055/027040
Harness with free end	6	2	9	7.6	W91470809	055/027041
Harness with free end	6	2	10	8.3	W91470810	055/027042
Harness with free end	6	2	11	9.1	W91470911	055/027043
Harness with free end	6	2	12	9.8	W91471012	055/027044

## POINTS HEATING BLOCK SYSTEM FOR STRIP HEATING

Heating block complete with all fastenings and cover plate (aka clamplock heater block)	1.5	4	2		W91530001	055/088726
Heating block complete with all fastenings, cover plate and z-bracket	1.5	8	4		W91540001	055/027679
Heating block complete with all fastenings, cover plate and z-bracket	1.5	8	8		W91550002	055/027677
Points heating block complete with all fastenings, cover plate and z-bracket	4	8	4		W91540002	055/027676
Heating block complete with all fastenings, cover plate and z-bracket	4	8	8		W91550001	055/027678
Points heating extension lead for 2 core heater cable 0.5m long	1.5	2	-	0.5	W40200101	055/027591
Points heating spare z-bracket for 4 way blocks	-	-	-	-	W49990022	055/039619
Points heating rewirable plug kit, to suit 2 core heater cable (4 plugs per kit)	-	-	-	-	W91440001	055/051313

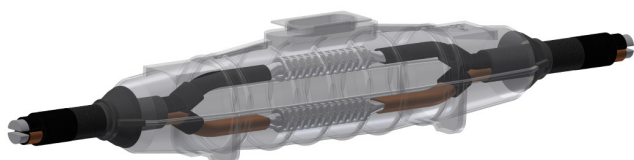
\* Non Preferred Solution

POINTS HEATING CABLE						
Description	Conductor CSA (mm²)	Cores	Ways	Lead Length (m)	Prysmian Part Number	PADS Cat. Number
Points heating cable EPR/PCP	1.5	4		100	F105 81952 0	006/150002
Points heating cable EPR/PCP	1.5	8		100	F105 81953 0	006/153102
Points heating cable EPR/PCP	4	8		100	F105 81954 0	006/153103
POINTS HEATING BLOCK WITH MOULDED IN CABLE, FOR STRIP HEATING						
Points heating block moulded in cable	1.5	8	4	3	4WB-1.5-03	-
Points heating block moulded in cable	1.5	8	4	7	4WB-1.5-07	-
Points heating block moulded in cable	1.5	8	4	8	4WB-1.5-08	-
Points heating block moulded in cable	1.5	8	4	10	4WB-1.5-10	-
Points heating block moulded in cable	1.5	8	4	12	4WB-1.5-12	-
Points heating block moulded in cable	1.5	8	4	17	4WB-1.5-17	-
Points heating block moulded in cable	1.5	8	4	22	4WB-1.5-22	-
Points heating block moulded in cable	1.5	8	4	27	4WB-1.5-27	-
Points heating block moulded in cable	1.5	8	4	32	4WB-1.5-32	-
Points heating block moulded in cable	1.5	8	4	55	4WB-1.5-55	-
Points heating block moulded in cable	4	8	4	7	4WB-4.0-07	-
Points heating block moulded in cable	4	8	4	12	4WB-4.0-12	-
Points heating block moulded in cable	4	8	4	17	4WB-4.0-17	-
Points heating block moulded in cable	4	8	4	22	4WB-4.0-22	-
Points heating block moulded in cable	4	8	4	27	4WB-4.0-27	-
Points heating block moulded in cable	4	8	4	32	4WB-4.0-32	-
Points heating block moulded in cable	4	8	4	37	4WB-4.0-37	-
Points heating block moulded in cable	4	8	4	42	4WB-4.0-42	-
Points heating block moulded in cable	4	8	4	47	4WB-4.0-47	-
Points heating block moulded in cable	1.5	8	8	7	8WB-1.5-07	-
Points heating block moulded in cable	1.5	8	8	10	8WB-1.5-10	-
Points heating block moulded in cable	1.5	8	8	12	8WB-1.5-12	-
Points heating block moulded in cable	1.5	8	8	17	8WB-1.5-17	-
Points heating block moulded in cable	1.5	8	8	22	8WB-1.5-22	-
Points heating block moulded in cable	1.5	8	8	27	8WB-1.5-27	-
Points heating block moulded in cable	1.5	8	8	32	8WB-1.5-32	-
Points heating block moulded in cable	4	8	8	7	8WB-4.0-07	-
Points heating block moulded in cable	4	8	8	12	8WB-4.0-12	-
Points heating block moulded in cable	4	8	8	17	8WB-4.0-17	-
Points heating block moulded in cable	4	8	8	22	8WB-4.0-22	-
Points heating block moulded in cable	4	8	8	27	8WB-4.0-27	-
Points heating block moulded in cable	4	8	8	32	8WB-4.0-32	-
Points heating block moulded in cable	4	8	8	37	8WB-4.0-37	-
Points heating block moulded in cable	4	8	8	45	8WB-4.0-45	-
Points heating block moulded in cable	4	8	8	55	8WB-4.0-55	-

## LV Joints

### Introduction

Enhanced non-toxic cold pour resin joint kits for connecting unarmoured signalling power distribution cable in accordance with NR/L2/SIGELP/27423



The products can be used in various configurations as detailed :

1. Connecting unarmoured aluminium signalling power distribution cable to unarmoured aluminium signalling power distribution cable
2. Connecting unarmoured aluminium signalling power distribution cable to unarmoured copper signalling power distribution cable when terminating into Apparatus Housings
3. Connection of legacy aluminium signalling power cables to aluminium cables produced in accordance with NR/L2/SIGELP/27408

Installation accessories for use in assembling these joint kits and the range of connectors within them, consists of specific crimp dies, pre-rounding dies and hydraulic crimp tooling as listed on page 7.

- Each joint complies with testing requirements of BS EN 50393 Cat II in relation to electrical performance, mechanical strength and moisture resistance
- The highly searching JEM resin both fully encapsulates the exposed cores and seals the incoming cables to prevent moisture ingress into the cable interstices
- The enhanced compression connectors used within these joints are in accordance with the higher BS EN 61238-1 Class A specification which requires them to resist short circuit fault currents and withstand high tensile loads.
- Expected service life of joints is equal to that of the cable
- Impact resistant

JEM resin was developed to meet the growing concerns regarding exposure to isocyanates in the workplace. JEM is a non-isocyanate system with all the technical performance characteristics of conventional resins but with additional features and benefits:

- Low viscosity (very searching, no voids, easier mixing)
- Easy mixing at low ambient temperatures (e.g. -15°C)
- Curing reaction not sensitive to moisture (will cure under water)
- Filled joints may be energised immediately if undisturbed
- Supplied in clear pouches which allows mixing to be observed in process
- Excellent adhesion to XLPE, PVC, Lead etc.
- Tested in accordance with HD631.1

## Joint Kit Selection

### CABLE TYPE

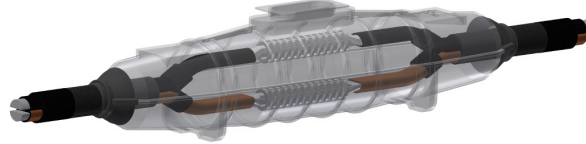
A - FGT solid aluminium cored cable	(NR/L2/SIGELP/27408)
B - FGT stranded aluminium cored cable	(NR/L2/SIGELP/27408)
C - BR 880 solid aluminium cored cable	(BR 880)
D - FGT stranded copper cored cable	(NR/L2/SIGELP/27408)
E - B2 stranded copper cored cable	(RT/E/PS/00005)



# Joints for Aluminium Conductors

## SOLID TO SOLID , STRANDED TO STRANDED

Designs specific for same conductor type and size jointing (eg. 2 core 50mm<sup>2</sup> SAC to 2 core 50mm<sup>2</sup> SAC)

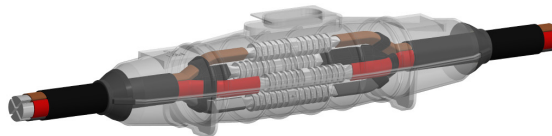


2 core Solid Aluminium (A or C) : 2 core Solid Aluminium (A or C)

CABLE IN		CABLE OUT		JOINT KIT			CRIMP DIE CROSS REFERENCE *	
Cable Type	Size (mm <sup>2</sup> )	Cable Type	Size (mm <sup>2</sup> )	Part Number	PADS No.	Shell Size	Pre Round Die	Crimp Die
Solid Aluminium	2x16	Solid Aluminium	2x16	RPJ016A2S	0054/213266	J4	N/A	U10DHX
Solid Aluminium	2x25	Solid Aluminium	2x25	RPJ025A2S	0054/213267	J4	UD16PO	U10DHX
Solid Aluminium	2x35	Solid Aluminium	2x35	RPJ035A2S	0054/213268	J4	UD25PO	U12DHX
Solid Aluminium	2x50	Solid Aluminium	2x50	RPJ050A2S	0054/213551	J4	UD35PO	U14DHX
Solid Aluminium	2x70	Solid Aluminium	2x70	RPJ070A2S	0054/213552	J4	UD50PO	U16DHX
Solid Aluminium	2x95	Solid Aluminium	2x95	RPJ095A2S	0054/213553	J5	UD70PO	U18DHX
Solid Aluminium	2x120	Solid Aluminium	2x120	RPJ120A2S	0054/213554	J5	UD95PO	U22DHX
Solid Aluminium	2x150	Solid Aluminium	2x150	RPJ150A2S	0054/213555	J5	UD120PO	U22DHX
Solid Aluminium	2x185	Solid Aluminium	2x185	RPJ185A2S	0054/213556	J5	UD150PO	U25DHX

2 core Stranded Aluminium (B) : 2 core Stranded Aluminium (B)

CABLE IN		CABLE OUT		JOINT KIT			CRIMP DIE CROSS REFERENCE *	
Cable Type	Size (mm <sup>2</sup> )	Cable Type	Size (mm <sup>2</sup> )	Part Number	PADS No.	Shell Size	Pre Round Die	Crimp Die
Stranded Aluminium	2x120	Stranded Aluminium	2x120	RPJ120A2F	0054/213557	J5	UD120PO	U22DHX
Stranded Aluminium	2x150	Stranded Aluminium	2x150	RPJ150A2F	0054/213558	J5	UD150PO	U25DHX
Stranded Aluminium	2x185	Stranded Aluminium	2x185	RPJ185A2F	0054/213559	J5	UD185PO	U28DHX



4 core Solid Aluminium (A or C) : 4 core Solid Aluminium (A or C)

CABLE IN		CABLE OUT		JOINT KIT			CRIMP DIE CROSS REFERENCE *	
Cable Type	Size (mm <sup>2</sup> )	Cable Type	Size (mm <sup>2</sup> )	Part Number	PADS No.	Shell Size	Pre Round Die	Crimp Die
Solid Aluminium	4x16	Solid Aluminium	4x16	RPJ016A4S	0054/213560	J4	N/A	U10DHX
Solid Aluminium	4x25	Solid Aluminium	4x25	RPJ025A4S	0054/213561	J4	UD16PO	U10DHX
Solid Aluminium	4x35	Solid Aluminium	4x35	RPJ035A4S	0054/213562	J4	UD25PO	U12DHX
Solid Aluminium	4x50	Solid Aluminium	4x50	RPJ050A4S	0054/213563	J5	UD35PO	U14DHX
Solid Aluminium	4x70	Solid Aluminium	4x70	RPJ070A4S	0054/213564	J5	UD50PO	U16DHX
Solid Aluminium	4x95	Solid Aluminium	4x95	RPJ095A4S	0054/213565	J5	UD70PO	U18DHX
Solid Aluminium	4x120	Solid Aluminium	4x120	RPJ120A4S	0054/213566	J6	UD95PO	U22DHX
Solid Aluminium	4x150	Solid Aluminium	4x150	RPJ150A4S	0054/213567	J6	UD120PO	U22DHX
Solid Aluminium	4x185	Solid Aluminium	4x185	RPJ185A4S	0054/213568	J6	UD150PO	U25DHX

4 core Stranded Aluminium (B) : 4 core Stranded Aluminium (B)

CABLE IN		CABLE OUT		JOINT KIT			CRIMP DIE CROSS REFERENCE *	
Cable Type	Size (mm <sup>2</sup> )	Cable Type	Size (mm <sup>2</sup> )	Part Number	PADS No.	Shell Size	Pre Round Die	Crimp Die
Stranded Aluminium	4x120	Stranded Aluminium	4x120	RPJ120A4F	0054/213569	J6	UD120PO	U22DHX
Stranded Aluminium	4x150	Stranded Aluminium	4x150	RPJ150A4F	0054/213570	J6	UD150PO	U25DHX
Stranded Aluminium	4x185	Stranded Aluminium	4x185	RPJ185A4F	0054/213571	J6	UD185PO	U28DHX

\*Tool and Dies are supplied separately



## Catenary Insulators

### Beaded Insulators - for Section & Neutral Section Insulation.

#### Applications

The Insulator can be inserted directly into the conductor wire of the overhead system. The characteristics of the insulator so accurately match those of the contact wire that contact with the power collecting pantograph is maintained even at high speeds.

## Technical Data

CERAMIC BEADED INSULATOR								
Description	Voltage Class	Creepage Length	End Type	Contact Wire Section	Total Length	OLE No.	Prysmian Part No.	PADS Cat. Number
Ceramic Beaded Insulator	25kV	1066.8mm	Friction Welded	107mm <sup>2</sup>	1867.5mm	121/351/001	K7605101	091/002428
Ceramic Beaded Insulator	25kV	1854mm	Friction Welded	107mm <sup>2</sup>	2604mm	121/351/002	K7605105	091/002474
Ceramic Beaded Insulator	25kV	1260mm	Friction Welded	107mm <sup>2</sup>	2010mm	121/351/003	K7605110	091/002533
Ceramic Beaded Insulator	25kV	1260mm	Friction Welded	150mm <sup>2</sup>	2042mm	121/351/017	K7618201	-
Ceramic Beaded Insulator	25kV	1100mm	Friction Welded	107mm <sup>2</sup>	1868mm	121/351/013	K7615001	-
Ceramic Beaded Insulator	25kV	1100mm	Friction Welded	100mm <sup>2</sup>	1880mm	-	K7617801	-
Ceramic Beaded Insulator	25kV	1854mm	Friction Welded	100mm <sup>2</sup>	2600mm	-	K7617802	088/002455
Ceramic Beaded Insulator	25kV	1067mm	Clevice	-	1580mm	121/255/003	K7605901	091/002413
Ceramic Beaded Insulator	25kV	610mm	Clevice	-	1456mm	-	K7605902	-
Ceramic Beaded Insulator	25kV	984mm	Clevice	-	1081mm	-	K7605903	-
Ceramic Beaded Insulator	25kV	1100mm	Clevice	-	1625mm	-	K7605908	-
Ceramic Beaded Insulator	25kV	1200mm	Clevice	-	1714mm	-	K7605909	-
END FITTING CLAMPS								
End fitting for High Speed Section Insulator	-	-	End Clevice	107mm <sup>2</sup>	-	-	K7246201	91/001985
End fitting for High Speed Section Insulator	-	-	End Clevice	100mm <sup>2</sup>	-	-	K7246202	-

INHIBITOR COMPOUND			
Description		Prysmian	PADS Cat.
Bicon X1 Inhibitor Compound 225g tubes	BX1225	7086401	-
Bicon X13 Inhibitor Compound	BX 13	4047601	054/212732



# Notes

## Bicon® Railway cable accessories

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