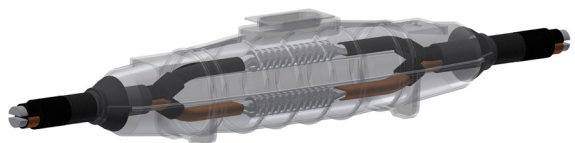
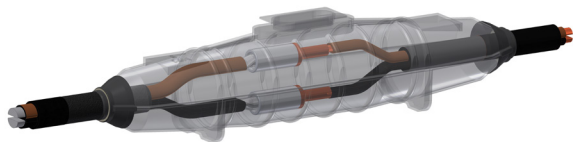
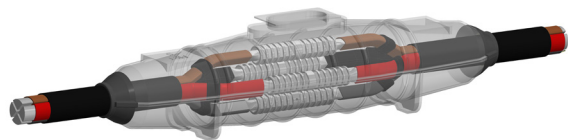


# Enhanced Resin Joint Kits for Network Rail Unarmoured Signalling Power Cables MRPJ-U



## Features and benefits:

- Enhanced resin joints for railway signalling power cables
- For use with copper and aluminium conductors
- Specifically designed to comply with Network Rail Product Specification NR/L2/SIGELP/27423
- Network Rail PADS Certificate PA05/06494
- Systemised tooling system
- Joint kits fully tested to BS EN 50393 Cat II in relation to mechanical strength and moisture resistance
- Connectors comply with BS EN 61238 Class A in relation to electrical performance

## Applications include:

- New class II installations
- SIN 119 remedial works
- Maintenance, repairs and life extensions
- Copper elimination programme



# 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

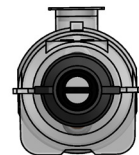
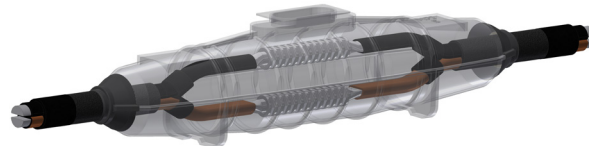
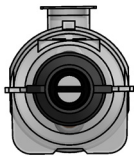
- A - FGT solid aluminium cored cable (NR/L2/SIGELP/27408)
- B - FGT stranded aluminium cored cable (NR/L2/SIGELP/27408)
- C - BR 880 solid aluminium cored cable (BR 880)
- D - FGT stranded copper cored cable (NR/L2/SIGELP/27408)
- E - B2 stranded copper cored cable (RT/E/PS/00005)
- F - BS 5467 SWA armoured stranded copper cored cable (NR/L2/SIGELP/27408)

Cable Types	Solid Aluminium Conductor (SAC) [A,C]	Stranded Aluminium Conductor [B]	Copper Conductor [D,E]
Solid Aluminium Conductor (SAC) [A,C]	Page 3	Page 4	Page 6
Stranded Aluminium Conductor [B]	Page 4	Page 3	Page 6
Copper Conductor [D,E]	Page 6	Page 6	Page 4 & 5

# Joins 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)

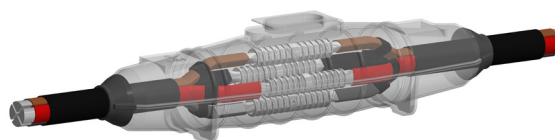
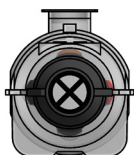


2 core Solid Aluminium (A or C) : 2 core Solid Aluminium (A or C)

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)

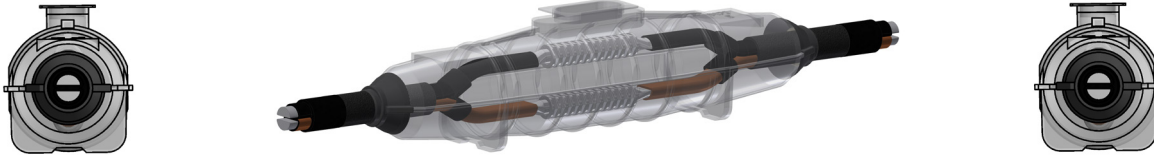
CABLE IN		CABLE OUT		JOINT KIT			CRIMP DIE CROSS REFERENCE *	
Cable Type	Size (mm <sup>2</sup> )	Cable Type	Size (mm <sup>2</sup> )	Part Number	PADS No.	Shell Size	Pre Round Die	Crimp Die
Stranded Aluminium	4x120	Stranded Aluminium	4x120	RPJ120A4F	0054/213569	J6	UD120PO	U22DHX
Stranded Aluminium	4x150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

# Joins for Aluminium Conductors

## SOLID TO STRANDED

Designs to allow the change from Solid Aluminium to Stranded Aluminium conductor type (eg. 50mm<sup>2</sup> SAC to 50mm<sup>2</sup> Str Al)



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

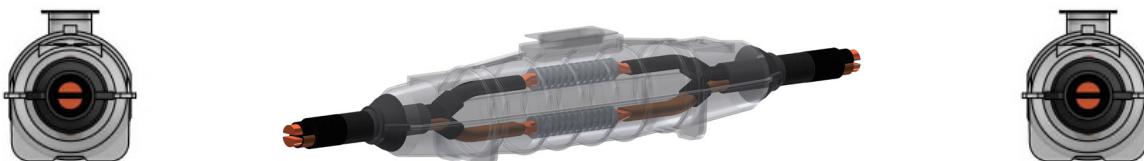
CABLE IN		CABLE OUT		JOINT KIT			CRIMP DIE CROSS REFERENCE *	
Cable Type	Size (mm <sup>2</sup> )	Cable Type	Size (mm <sup>2</sup> )	Part Number	PADS No.	Shell Size	Pre Round Die	Crimp Die
Solid Aluminium	2x16	Stranded Aluminium	2x16	RPJ016FTS2	0054/213592	J4	N/A	U10DHX
Solid Aluminium	2x25	Stranded Aluminium	2x25	RPJ025FTS2	0054/213593	J4	UD16PO	U10DHX
Solid Aluminium	2x35	Stranded Aluminium	2x35	RPJ035FTS2	0054/213594	J4	UD25PO	U12DHX
Solid Aluminium	2x50	Stranded Aluminium	2x50	RPJ050FTS2	0054/213595	J4	UD35PO	U14DHX
Solid Aluminium	2x70	Stranded Aluminium	2x70	RPJ070FTS2	0054/213596	J5	UD50PO	U16DHX
Solid Aluminium	2x95	Stranded Aluminium	2x95	RPJ095FTS2	0054/213597	J5	UD70PO	U18DHX
Solid Aluminium	2x120	Stranded Aluminium	2x120	RPJ120FTS2	0054/213598	J5	UD95PO	U22DHX
Solid Aluminium	2x150	Stranded Aluminium	2x150	RPJ150FTS2	0054/213599	J5	UD120PO	U22DHX
Solid Aluminium	2x185	Stranded Aluminium	2x185	RPJ185FTS2	0054/213600	J5	UD150PO	U25DHX
Stranded Aluminium	2x120	Stranded Aluminium	2x120	RPJ120FTF2	0054/213601	J5	UD120PO	U22DHX
Stranded Aluminium	2x150	Stranded Aluminium	2x150	RPJ150FTF2	0054/213602	J5	UD150PO	U25DHX
Stranded Aluminium	2x185	Stranded Aluminium	2x185	RPJ185FTF2	0054/213603	J5	UD185PO	U28DHX

\*Tool and Dies are supplied separately

ALUMINIUM

# Joins for Copper Conductors

Designs specific for same conductor type and sizing (eg. core 50mm<sup>2</sup> Str Cu to 2 core 50mm<sup>2</sup> Str Cu)

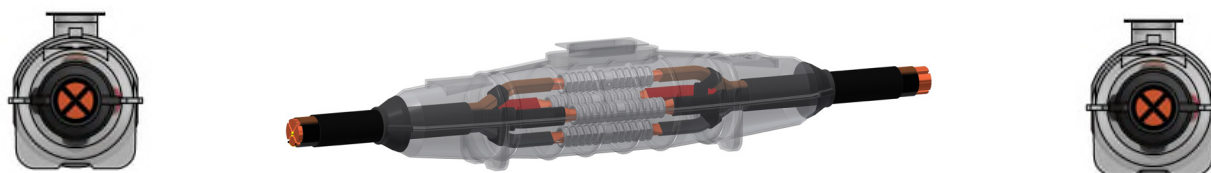


2 Core Copper (D or E) : 2 Core Copper (D or E)

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
Copper	2x10	Copper	2x10	RPJ010C2	0054/213572	J3	N/A	U6DHX
Copper	2x16	Copper	2x16	RPJ016C2	0054/213573	J4	N/A	U8DHX
Copper	2x25	Copper	2x25	RPJ025C2	0054/213574	J4	UD25PO	U10DHX
Copper	2x35	Copper	2x35	RPJ035C2	0054/213575	J4	UD35PO	U12DHX
Copper	2x50	Copper	2x50	RPJ050C2	0054/213576	J4	UD50PO	U14DHX
Copper	2x70	Copper	2x70	RPJ070C2	0054/213577	J4	UD70PO	U16DHX
Copper	2x95	Copper	2x95	RPJ095C2	0054/213578	J5	UD95PO	U18DHX
Copper	2x120	Copper	2x120	RPJ120C2	0054/213579	J5	UD120PO	U20DHX
Copper	2x150	Copper	2x150	RPJ150C2	0054/213580	J5	UD150PO	U22DHX

# Joins for Copper Conductors

Designs specific for same conductor type and sizing (eg. core 50mm<sup>2</sup> Str Cu to 2 core 50mm<sup>2</sup> Str Cu)



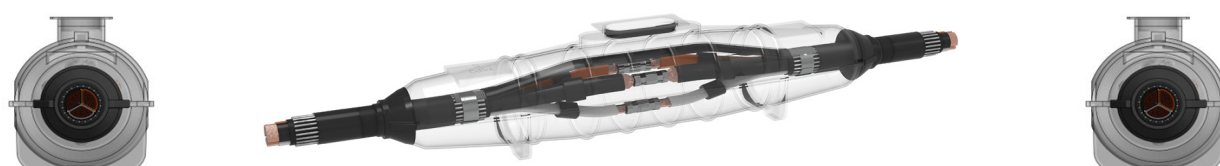
4 Core Copper (D or E) : 4 Core Copper (D or E)

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
Copper	4x10	Copper	4x10	RPJ010C4	0054/213582	J4	N/A	U6DHX
Copper	4x16	Copper	4x16	RPJ016C4	0054/213583	J4	N/A	U8DHX
Copper	4x25	Copper	4x25	RPJ025C4	0054/213584	J4	UD25PO	U10DHX
Copper	4x35	Copper	4x35	RPJ035C4	0054/213585	J4	UD35PO	U12DHX
Copper	4x50	Copper	4x50	RPJ050C4	0054/213586	J5	UD50PO	U14DHX
Copper	4x70	Copper	4x70	RPJ070C4	0054/213587	J5	UD70PO	U16DHX
Copper	4x95	Copper	4x95	RPJ095C4	0054/213588	J5	UD95PO	U18DHX
Copper	4x120	Copper	4x120	RPJ120C4	0054/213589	J5	UD120PO	U20DHX
Copper	4x150	Copper	4x150	RPJ150C4	0054/213590	J5	UD150PO	U22DHX
Copper	4x185	Copper	4x185	RPJ185C4	0054/213591	J5	UD185PO	U25DHX

\*Tool and Dies are supplied separately

# Joins for BS 5467 SWA Armoured Cables with copper conductors

Designs specific for same conductor type and sizing (eg. 3 core 50mm<sup>2</sup> Str Cu to 3 core 50mm<sup>2</sup> Str Cu)



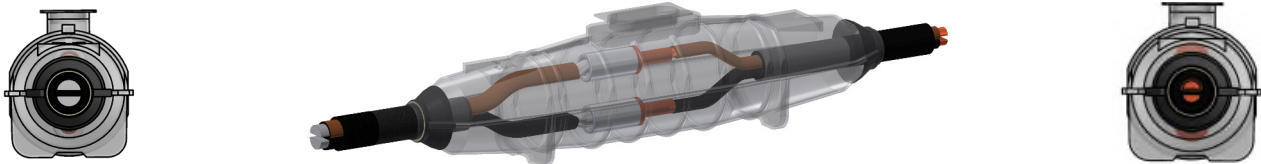
3 Core Copper + SWA (F) : 3 Core Copper + SWA (F)

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
Copper	3x10	Copper	3x10	RPJ010C3A	TBC	J4	N/A	U6DHX
Copper	3x16	Copper	3x16	RPJ016C3A	TBC	J4	N/A	U8DHX
Copper	3x25	Copper	3x25	RPJ025C3A	TBC	J4	UD25PO	U10DHX
Copper	3x35	Copper	3x35	RPJ035C3A	TBC	J4	UD35PO	U12DHX
Copper	3x50	Copper	3x50	RPJ050C3A	TBC	J5	UD50PO	U14DHX
Copper	3x70	Copper	3x70	RPJ070C3A	TBC	J5	UD70PO	U16DHX
Copper	3x95	Copper	3x95	RPJ095C3A	TBC	J5	UD95PO	U18DHX

\*Tool and Dies are supplied separately

# Bi-metal Joints for Copper / Aluminium

Designs to allow Aluminium Conductors to be joined to Copper Conductors



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	Aluminium Side		Copper Side	
							Pre Round Die	Crimp Die	Pre Round Die	Crimp Die
Solid Aluminium	2x70	Copper	2x25	RPJ0700252B2S	0054/213604	J4	UD50PO	U16DHX	UD25PO	U10DHX
Solid Aluminium	2x95	Copper	2x25	RPJ0950252B2S	0054/213605	J4	UD70PO	U18DHX	UD25PO	U10DHX
Solid Aluminium	2x120	Copper	2x25	RPJ1200252B2S	0054/213607	J4	UD95PO	U22DHX	UD25PO	U10DHX
Solid Aluminium	2x150	Copper	2x25	RPJ1500252B2S	0054/213609	J4	UD120PO	U22DHX	UD25PO	U10DHX
Solid Aluminium	2x185	Copper	2x25	RPJ1850252B2S	0054/213611	J4	UD150PO	U25DHX	UD25PO	U10DHX
Solid Aluminium	2x95	Copper	2x50	RPJ0950502B2S	0054/213606	J5	UD70PO	U18DHX	UD50PO	U14DHX
Solid Aluminium	2x120	Copper	2x50	RPJ1200502B2S	0054/213608	J5	UD95PO	U22DHX	UD50PO	U14DHX
Solid Aluminium	2x150	Copper	2x50	RPJ1500502B2S	0054/213610	J5	UD120PO	U22DHX	UD50PO	U14DHX
Solid Aluminium	2x185	Copper	2x50	RPJ1850502B2S	0054/213612	J5	UD150PO	U25DHX	UD50PO	U14DHX

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	Aluminium Side		Copper Side	
							Pre Round Die	Crimp Die	Pre Round Die	Crimp Die
Stranded Aluminium	2x120	Copper	2x25	RPJ1200252B2F	0054/213613	J5	UD120PO	U22DHX	UD25PO	U10DHX
Stranded Aluminium	2x150	Copper	2x25	RPJ1500252B2F	0054/213615	J5	UD150PO	U25DHX	UD25PO	U10DHX
Stranded Aluminium	2x185	Copper	2x25	RPJ1850252B2F	0054/213617	J5	UD185PO	U28DHX	UD25PO	U10DHX
Stranded Aluminium	2x120	Copper	2x50	RPJ1200502B2F	0054/213614	J5	UD120PO	U22DHX	UD50PO	U14DHX
Stranded Aluminium	2x150	Copper	2x50	RPJ1500502B2F	0054/213616	J5	UD150PO	U25DHX	UD50PO	U14DHX
Stranded Aluminium	2x185	Copper	2x50	RPJ1850502B2F	0054/213618	J5	UD185PO	U28DHX	UD50PO	U14DHX

\*Tool and Dies are supplied separately

# Crimp Tooling and Dies

In order to comply with NR/L2/SIGELP/27423 standard the following crimp dies are required for the compression connectors within the joints.

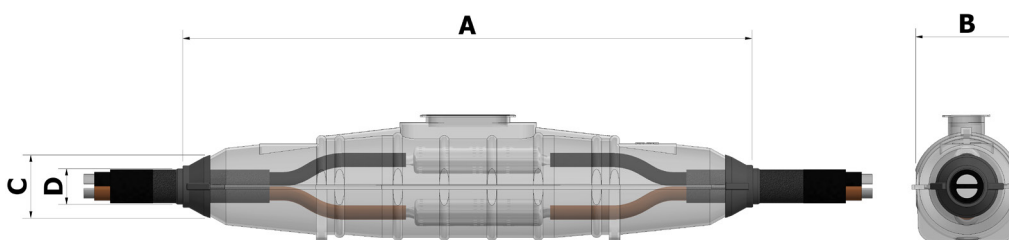
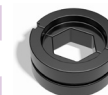
CRIMP TOOLING		
Prysman Part No.	Description	PADS Catalogue Number
E6-3000	Electro-Hydraulic Crimper (Battery Operated)	054/212729



PRE ROUNDING DIES					
Prysman Part No.	Conductor CSA (mm <sup>2</sup> )			PADS Catalogue Number	Die Ref
	Stranded Aluminium (FAC)	Solid Aluminium (SAC)	Copper (Cu)		
UD16PO	-	25	-	-	-
UD25PO	-	35	25	054/213619	MR6, 3-CK
UD35PO	-	50	35	054/213620	MR7, 5-CK
UD50PO	-	70	50	054/213621	MR9, 0-CK
UD70PO	-	95	70	054/213622	MR10, 5-CK
UD95PO	-	120	95	054/213623	MR12, 5-CK
UD120PO	120	150	120	054/213624	MR14, 0-CK
UD150PO	150	185	150	054/213625	MR15, 7-CK
UD185PO	185	-	185	054/213626	MR17, 5-CK



DIN HEX CRIMP DIES						
Prysman Part No.	DIN Crimp Die No	Conductor Size (mm <sup>2</sup> )			PADS Catalogue Number	Die Ref
		Stranded Aluminium (FAC)	Solid Aluminium (SAC)	Copper (Cu)		
U6DHX	6	-	-	10	054/213627	MK6-CK / Cu10
U8DHX	8	-	-	16	054/213628	MK8-CK / Cu16
U10DHX	10	-	16/25	25	054/213629	MK10-CK / Cu25
U12DHX	12	-	35	35	054/213630	MK12-CK / Cu35
U14DHX	14	-	50	50	054/213631	MK14-CK / Cu50
U16DHX	16	-	70	70	054/213632	MK16-CK / Cu70
U18DHX	18	-	95	95	054/213633	MK18-CK / Cu95
U20DHX	20	-	-	120	054/213634	MK20-CK / Cu120
U22DHX	22	120	120/150	150	054/213635	MK22-CK / Cu150
U25DHX	25	150	185	185	054/213636	MK25-CK / Cu185
U28DHX	28	185	-	-	054/213637	MK28-CK / Cu240



JOINT SHELL DIMENSIONS				
Shell Size	(A) joint shell length	(B) Internal diameter	(C) Max cable entry diameter	(D) Min cable entry diameter
J3	325mm	52mm	39mm	23mm
J4	375mm	68mm	50mm	28mm
J5	520mm	102mm	58mm	32mm
J6	705mm	142mm	75mm	45mm

# Enhanced Resin Joint Kits for Network Rail Unarmoured Signalling Power Cables MRPJ-U

DISCLAIMER: Whilst Prysmian Group has made every effort to ensure the information and guidance in this catalogue is correct, all parties should use their own skill and judgement when using it. The Prysmian Group do not accept any liability to anyone for any damage or loss which may have been caused by an omission from, or error to this catalogue, whether the omission or error was the result of negligence or any other cause. The information given may change without notice.

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[www.biconcomponents.co.uk](http://www.biconcomponents.co.uk)

**Prysmian**  
Group



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