



BANANA PLUGS

R644/R921/R929/R941/R948/R995/R999

Section 20 Table of Contents

INTRODUCTION

Introduction.....	20-4 to 20-5
Finder Guide.....	20-6 to 20-7

4 MM SERIES

Introduction.....	20-8
Characteristics	20-9
Packaging.....	20-9
Safety Series:	
<i>Plugs</i>	20-10
<i>Sockets</i>	20-11
<i>Patch Cords</i>	20-11 to 20-13
Standard Series:	
<i>Plugs</i>	20-14 to 20-15
<i>Sockets</i>	20-15
<i>Patch Cords</i>	20-16 to 20-17
Accessories	20-18

2 MM SERIES

Introduction.....	20-19 to 20-20
Characteristics	20-21 to 20-22
Packaging.....	20-22
Plugs	20-23 / 20-25
Sockets	20-24
Patch Cords.....	20-24
20-way Fixed Connectors.....	20-26
Contact Blocks.....	20-27
Ribbon Patch Cords	20-28
Accessories	20-28

BANANA ADAPTERS

Introduction.....	20-29
Characteristics	20-29
Packaging.....	20-29
Adapters.....	20-30
Adapters Patch Cords.....	20-31
Panel Drilling	20-32

Introduction

INTRODUCTION

With over 60 years of experience and continuous efforts in R&D, Radiall has become Europe’s number one source for coaxial connectors. Radiall’s position as a market leader has enabled the company to excel in the passive microwave component field for more than 50 years. Radiall’s expertise in design, development and manufacturing of passive microwave components is widely acknowledged in today’s industry.

Radiall’s professional banana plugs consist of two major series and adapters:

THE 4 MM SERIES

- Safety plugs and sockets
- Safety patch cords
- Standard plugs and sockets
- Standard patch cords
- Accessories

THE 2 MM SERIES

- Plugs and sockets
- Patch cords
- PCB test points
- 20-way fixed connector
- Short circuit links
- Contact block and ribbon patch cords
- Accessories

ADAPTERS

- 2 mm/4 mm banana adapter
- BNC/2 mm banana adapter
- BNC/4 mm banana adapter
- Banana adapter patch cord
- Coaxial banana adapter patch cord



APPLICATIONS

- Research institutes and laboratories
- Education
- Instrumentations
- Low voltage
- Electronics
- Engineering



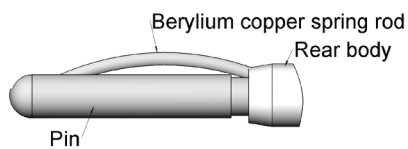
Introduction

FEATURES & BENEFITS

Radiall's in-house technologies ensure high reliable product solutions due to its expertise and advanced design technology.

Radiall's contacts consists of a monobloc pin fitted with a copper beryllium spring finger. Depending on the model, the pin may or may not have a protective sleeve.

	4 MM SERIES	1 MM SERIES
Contact resistance	0.5 mΩ	1mΩ
Current rating, max @ 20 °C	30 A	10 A
Contact durability, min.	10,000 mating cycles	







BENEFITS

- Excellent electrical conduction
- Very low contact resistance
- Robust contact point pressure when connected
- High durability for high number of mating cycles






GLOSSARY OF ABBREVIATIONS

ABBREVIATION SERIES		DESTINATION
4 mm	2 mm	
B1	BL-I	Insulated plug with solder connection
B2		Insulated plug with crimp or solder connection
	BL-PI	Insulated panel plug
B4	BL	Uninsulated plug
	BL2-4	Uninsulated threaded plug
	BLP-4	Uninsulated panel plug with solder connection
DPI	DL-PL	Insulated panel socket
DPI5		Insulated safety panel socket
DP	DLP	Uninsulated panel socket
	BLP D-2	Uninsulated panel plug/2mm dia. socket
BDR-4	BDR-2	Stackable plug with quick grip cable clamp
BDR-SR		Stackable plug, partial safety
BDR-PR		Stackable plug, partial safety non thermofusible sleeve
BDM	BLDM	Stackable patch cord
BDSA		Stackable patch cord, total safety
BDSR		Stackable patch cord, partial safety
BM	BLM	Extension patch cord
DM	DLM	Extension female patch cord
PTM		Test probe patch cord
	FL	Contact block
	ML	Ribbon patch cords

Finder Guide

SERIES	IMAGE	CATEGORY	DESCRIPTION	PAGE	
4mm		Safety series	Banana plugs	Stackable plug (BDR-SR)	11
				Stackable plug, non-thermofusible sleeve (BDR-PR)	
			Panel sockets	Insulated safety panel socket (DPIS)	
		Patch cords	Plug/Plug stackable, retractable sleeve (BDSA)	12	
			Plug/Plug stackable, non-retractable sleeve (BDSA)		
		Patch cords made to order	13		
		Standard series	Banana plugs	Uninsulated plug (B4)	14
				Insulated plug with solder connection (B1)	
				Insulated plug with crimp or solder connection (B2)	
				Stackable plug with quick grip cable clamp (BDR-4)	
			Panel sockets	Uninsulated panel sockets (DP)	15
		Insulated panel sockets (DP)			
		Patch cords	BM/BM extension patch cords	16	
			BDM/BDM stackable patch cords		
			PTM/BM Test probe patch cords		
			Patch cords made to order	17	
			Test clip - with flexible steel rod		
		Safety test probe			
		Safety female - female adapter			
2mm		Standard series	Banana plugs	Uninsulated plug with crimp or solder connection (BL)	23
				Uninsulated panel plug with solder connection (BLP-4)	
				Uninsulated panel plug/2mm dia. socket (BLP D-2)	
				Insulated plugs with solder connection (BL-I)	
				Insulated panel plug (BL-PI)	
		Stackable plug with quick grip cable clamp (BDR-2)			
	Panel sockets	Uninsulated panel sockets (DLP)	24		
		Insulated panel sockets (DL-PI)			
		Patch cords	BLM extension patch cords	25	
	BLDM stackable patch cords				
Patch cords made to order					

Finder Guide

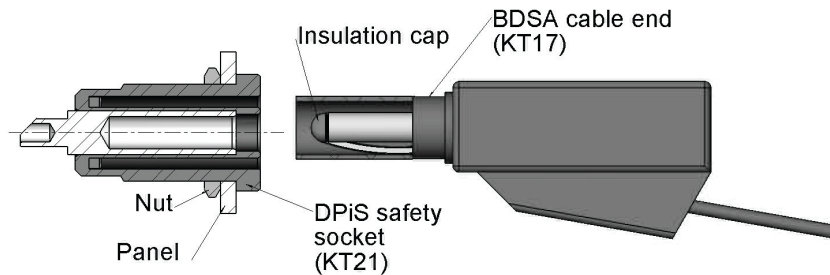
SERIES	IMAGE	CATEGORY		DESCRIPTION	PAGE
2mm		Standard series	Multi-contact 20-way fixed connectors	Solder cup - 12 mm contact pitch	26
				Solder cup - 6 mm contact pitch	
				Pin - 12 mm contact pitch	
				Pin - 6 mm contact pitch	
		Short cut circuit	12 mm contact pitch		
			6 mm contact pitch		
		Contact Blocks and Ribbon patch cords	Contact blocks	Male contact blocks (FL M)	27
				Female contact blocks (FL F)	
		Patch leads	Male - male ribbon patch cords (ML MM)	28	
			Female - female ribbon patch cords (ML FF)		
	Accessories		PCB Test socket	30	
			Test probe		
Adapters		Banana adapters	Banana adapters	2 mm male - 4 mm female	32
				BNC/2 mm Banana adapter	
		BNC/Banana adapters	BNC/4 mm Banana adapter		
		Banana adapters patch cords		BLM/BM	33
				BLDM/BDM	
BLM/DM					
Coaxial patch cords			BNC/BCX		

INTRODUCTION

4 MM SAFETY SERIES

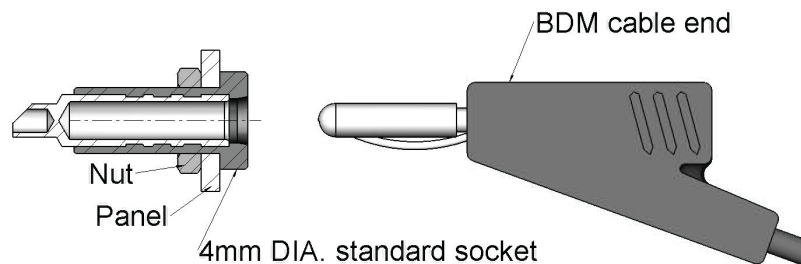
Due to safety being an important criteria when using test and measurement instrumentation, especially for high voltage use, Radiall developed the 4 mm Safety Series, which offers an improved protection system that eliminates all risk of contact with live elements when handling components.

Safety connectors are reinforced by a protective sleeve and an insulation cap on the top of the contact. The protective sleeve may be retractable or non-retractable. All plugs with non-retractable sleeves are rated at 600V, CAT III or 1000V, CAT II according to the safety standard IEC 61010-031 version 2002.



4 MM STANDARD SERIES

The 4 mm Standard Series meets the requirements of NF C 93 440 standards. The product in this series are not intended for hand-held use at voltage above 30Vac/60Vdc.



Example of a regular connection: the contact is exposed.

ACCESSORIES: TEST CLIPS

- With sliding hook: The contact hook guarantees a good grip on wires, components and PCB pin up to 1.5 mm² thick.
- Alligator Test Clips: Features a large opening and gripping efficiency for use on motors, fuse holders, terminals, etc.
- Flexible Steel Rod Test Clips: The thin flexible steel rod allows testing of hard-to-reach points in dense circuitry.
- Crocodile Test Clips: Features a large 20 mm opening to allow attachment to larger test points.
- Safety Test Probe: An extra thin probe allows contact through coatings and some insulations. It can also be used for PCB measurements. Fitted with a rear-mounted 4 mm socket, it can be used with BM patch cords.

4 mm Series

CHARACTERISTICS

	PLUGS	SOCKETS	PATCH CORDS
--	-------	---------	-------------

ELECTRICAL CHARACTERISTICS

Current rating, max. • 4 mm safety • 4 mm standard	30A (@ 20C)		15 A (@ 20C) patch cords 1 mm ² 15 A (@ 20C) patch cords 1 mm ² 30 A (@ 20C) 2 an 2.5 mm ²
Dielectric withstanding voltage	2500 Vrms @ 50Hz		
Operating voltage	750 Vrms @ 50Hz		
Insulation resistance, min.	5000 MΩ		
Contact resistance, max.	0.5mΩ		-

MECHANICAL CHARACTERISTICS

Mechanical, durability, min.	10,000 matings		
Average insertion force	25N		
Tightening torque • 4 mm safety • 4 mm standard	-	Max 140 N.cm 120 N.cm	-

ENVIRONMENTAL CHARACTERISTICS

Temperature range • 4 mm safety • 4 mm standard	-40 °C / +85 °C	-40 °C / +100 °C	BDSR patch cords -40 °C / +85 °C BDSA patch cords -25M °C / +70 °C
Damp heat	(uninsulated) -65 °C / +155 °C (insulated models) -60 °C / +100 °C		-40 °C / +70 °C

MATERIALS

Insulation	Thermoplastic		
Contacts	Nickel or tin plated Copper alloy/brass		

CHARACTERISTICS ACCESSORIES

	WITH SLIDING HOOK	WITH ALLIGATOR CLIP	WITH FLEXIBLE STEEL RODS	WITH CROCODILE DIE	SAFETY TEST PROBE
--	-------------------	---------------------	--------------------------	--------------------	-------------------

ELECTRICAL CHARACTERISTICS

Operating voltage, max.	1000 Vrms				1500 Vrms
Current rating max	4A (@20C)	2.5A	32A	32A	-
Clip opening (max)	1.5mm (max hooking capacity)"			20 mm	

MATERIALS

Body	Thermoplastic		
Contact	Stainless steel		Steel

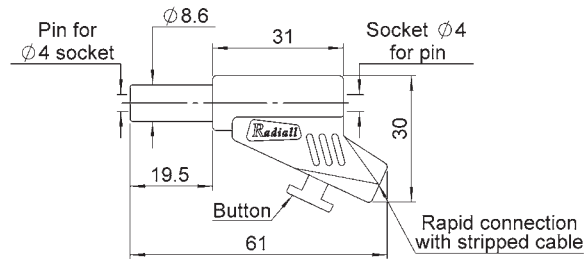
PACKAGING

	2 mm safety series	4 mm standard series
Plugs	10 pieces	100 pieces
Panel sockets		100 pieces
Patch cords		10 pieces
Accessories		10 pieces

4 mm Series

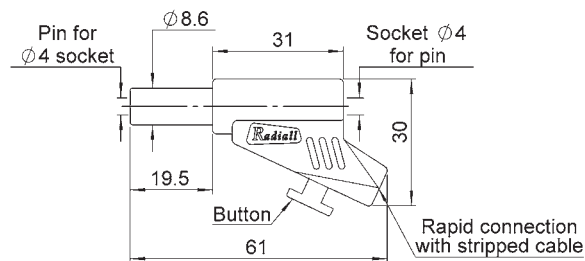
**SAFETY SERIES
PLUGS**

STACKABLE PLUG, PARTIAL SAFETY (BDR-SR)



PART NUMBER	COLOR	STANDARD
R941 460 600	Black	NFC 93440-KT12R
R941 461 600	Red	
R941 462 600	Green	
R941 463 600	Blue	
R941 464 600	Yellow	

STACKABLE PLUG, PARTIAL SAFETY-NON-THERMOFUSIBLE SLEEVE (BDR-PR)



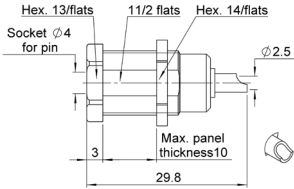
PART NUMBER	COLOR	STANDARD
R941 480 600	Black	NFC 93440-KT12R DCN 5935 BA
R941 481 600	Red	

4 mm Series

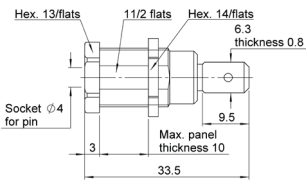
SOCKETS

INSULATED SAFETY PANEL-MOUNT SOCKETS (DPIS)

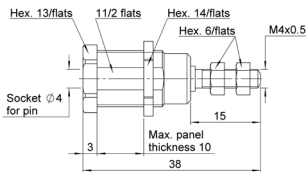
Insulated safety panel sockets are mateable with standard 4 mm BM/BDM patch cords and BDSR/BDSA safety patch cords.



PART NUMBER	COLOR	TERMINATION	STANDARD	PANEL DRILLING
R941 920 600	Black	Solder cup	NFC 93440-KT21F	P05
R941 921 600	Red			
R941 922 600	Green			
R941 923 600	Blue			
R941 924 600	Yellow			



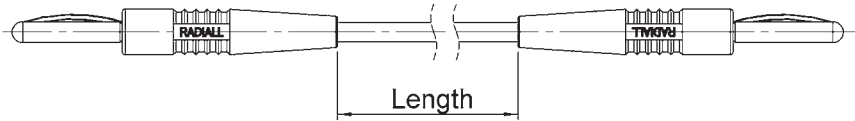
PART NUMBER	COLOR	TERMINATION	STANDARD	PANEL DRILLING
R941 920 602	Black	Flat for FASTON lug type	NFC 93440-KT21L	P05
R941 921 602	Red			



PART NUMBER	COLOR	TERMINATION	STANDARD	PANEL DRILLING
R941 920 603	Black	For fork lug	NFC 93440-KT21V	P05
R941 921 603	Red			
R941 924 603	Yellow			

PATCH CORDS

Except where specified, all patch cords lengths are defined by the length of the cable without connectors or strain relief.



Radial Patch Cord Series includes:

- BDSR/BDSR: Retractable sleeve for partial security
- BDSA/BDSA: Non-retractable sleeve where secure connections are critical;The cable assembly is rated at 1000 V, CAT II according to the safety standard IEC61010-31
- Patch cords made-to-order

4 mm Series

PATCH CORDS

PLUG/PLUG STACKABLE PATCH CORDS - RETRACTABLE SLEEVE (BDSR/BDSR)

Cable type:

- PVC, 1 mm² conductor, 3.5 mm insulation
- PVC, 2 mm² conductor, 3.5 mm insulation
- Silicone, 2.5 mm² conductor, 4 mm insulation



R948 1 6

PATCH CORDS LENGTH

- 3:** 25 cm
- 4:** 50 cm
- 5:** 100 cm
- 6:** 150 cm
- 7:** 200 cm

CABLE TYPE

- 00:** PVC 1 mm² 3.5 mm
- 02:** PVC 2 mm² 3.5 mm
- 29:** Silicone 2.5 mm² 4 mm

COLOR

- 0:** Black
- 1:** Red

PLUG/PLUG STACKABLE PATCH CORDS - NON-RETRACTABLE SLEEVE (BDSA/BDSA)

Cable type:

- PVC, 1 mm² conductor, 3.5 mm insulation
- PVC, 2 mm² conductor, 3.5 mm insulation
- Silicone, 2.5 mm² conductor, 4 mm insulation



R948 3 6

PATCH CORDS LENGTH

- 3:** 25 cm
- 4:** 50 cm
- 5:** 100 cm
- 6:** 150 cm
- 7:** 200 cm

CABLE TYPE

- 00:** PVC 1 mm² 3.5 mm
- 02:** PVC 2 mm² 3.5 mm
- 29:** Silicone 2.5 mm² 4 mm

COLOR

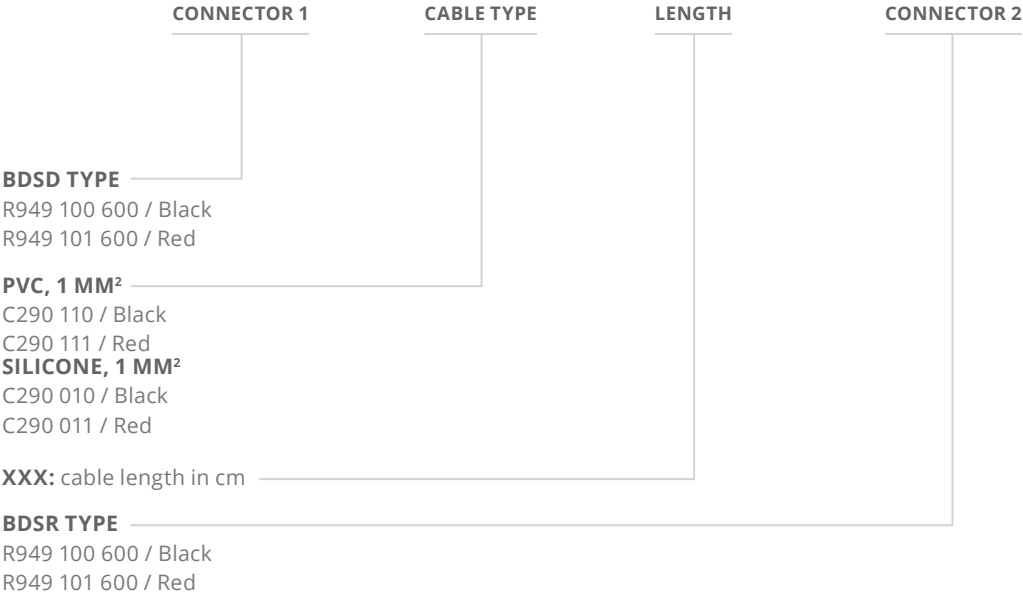
- 0:** Black
- 1:** Red

4 mm Series

MADE-TO-ORDER PATCH CORDS

Customized patch cords using BDSR plugs can be made-to-order to meet your specifications. Choices include connector style, cable type, color, and cable length.

HOW TO ORDER



EXAMPLE TO ORDER

1 black BDSR plug / red silicone 1 mm² cable length 125 cm / 1 Red BDSR plug.
Part number: R949 100 600 / C290 011-125 cm / R949 100 600

Notes

- 1. For other options, please contact your local representative
- 2. Refer to the table below to select your insert class:

4 mm Series

**STANDARD SERIES
PLUGS**

UNINSULATED BANANA PLUGS

FIGURE	PART NUMBER	DESCRIPTION	PANEL DRILLING
	R941 019 000	Solder or crimp 15mm solder post Strip length: 5 mm Crimp tool: Buchanan R612 548 000 Positioner Radiall R282 561 000 Crimp setting: 1.20 (18 AWG) 1.08 (22 AWG) Maxi 15A	-
	R941 029 000	Solder or crimp 2mm solder post Strip length: 5 mm Crimp tool: Buchanan R612 548 000 Positioner Radiall R282 561 000 Crimp setting: 1.50 (14 AWG) 1.25 (18 AWG)	-
	R941 049 000	Threaded panel connection 8 mm rear length	P03
	R941 069 000	Threaded panel connection 18 mm rear length	P03
	R941 149 000	Panel banana plug 4 mm with rear socket for mating with 4 mm plug	P01

4 mm Series

INSULATED BANANA PLUGS

FIGURE	PART NUMBER	COLOR	DESCRIPTION
	R941 330 000	Black	Tin-plated solder cup or Rear socket for 2 mm banana plug (14 AWG)
	R941 331 000	Red	
	R941 332 000	Green	
	R941 333 000	Blue	
	R941 334 000	Yellow	
	R941 336 000	White	
	R941 340 000	Black	Tin-plated solder cup or Screw tightening or Rear socket for 2 mm banana plug (14 AWG)
	R941 341 000	Red	
	R941 342 000	Green	
	R941 343 000	Blue	
	R941 344 000	Yellow	
	R941 346 000	White	
	R941 460 000	Black	Stackable banana with quick-grip clamp for stripped cable 2 and 4 mm socket for banana plugs
	R941 461 000	Red	

SOCKETS

UNINSULATED PANEL SOCKETS (DP)

FIGURE	PART NUMBER	DESCRIPTION	PANEL DRILLING
	R941 619 000	Solder cup Cup tripping dimension 4 mm (14 AWG)	P01
	R941 629 000 (nickel plated version)		

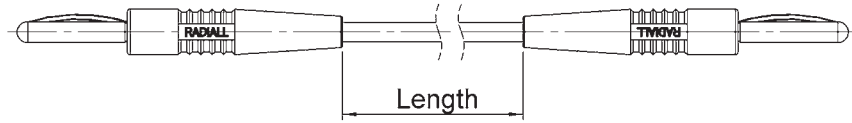
INSULATED PANEL SOCKETS (DPI)

FIGURE	PART NUMBER	COLOR	DESCRIPTION	PANEL DRILLING
	R941 920 001	Black	Tin-plated solder cup UL 94V-0 thermoplastic insulation	P06
	R941 921 001	Red		
	R941 922 001	Green		
	R941 923 001	Blue		
	R941 924 001	Yellow		
	R941 926 001	White		

4 mm Series

PATCH CORDS

Except where specified, all patch cords lengths are defined by the length of the cable without connectors or strain relief.



Radial Patch Cord Series includes:

- **BM/BM:** Molded extension patch cords
- **BDM/BDM:** Molded stackable patch cords
- **PTM/BM:** Molded test probe patch cords
- Patch cords made-to-order

EXTENSION PATCH CORDS (BM/BM)

Cable type: PVC, 1mm² conductor, 3.5mm insulation



R948 0 000

PATCH CORDS LENGTH

- 3:** 25 cm
- 4:** 50 cm
- 5:** 100 cm
- 6:** 150 cm
- 7:** 200 cm

COLOR

- 0:** Black
- 1:** Red
- 2:** Green
- 3:** Blue

STACKABLE PATCH CORDS (BDM/BDM)

Cable type:

- PVC, 1 mm² conductor, 3.5 mm insulation
- PVC, 2 mm² conductor, insulation
- Silicone, 2.5 mm² conductor, 4 mm insulation



R948 1 0

PATCH CORDS LENGTH

- 3:** 25 cm
- 4:** 50 cm
- 5:** 100 cm
- 6:** 150 cm
- 7:** 200 cm

CABLE TYPE

- 00:** PVC 1 mm² 3.5 mm
- 02:** PVC 2 mm² 3.5 mm
- 29:** Silicone 2.5 mm² 4 mm

COLOR

- 0:** Black
- 1:** Red
- 2:** Green
- 3:** Blue
- 4:** Yellow

4 mm Series

TEST PROBE PATCH CORDS (PTM/BM)

Cable types: PVC, 1 mm², 3.5 mm insulation



PART NUMBER	COLOR	CORD LENGTH
R948 250 000	Black	100 cm
R948 251 000	Red	100 cm

MADE-TO-ORDER PATCH CORDS

The series comprises the following extremities: BM, BDM, DM. Choices include connector style, cable type, color, and cable length.

HOW TO ORDER

CONNECTOR 1	CABLE TYPE	LENGTH	CONNECTOR 2
<p>BM TYPE</p> <p>R949 000 / Black R949 001 / Red R949 003 / Blue</p> <p>BDM TYPE</p> <p>R949 100 / Black R949 101 / Red</p> <p>DM TYPE</p> <p>R949 500 / Black R949 501 / Red</p> <p>PVC 1 MM² CROSS SECTION: C 290 11x x=0: Black, 1: Red, 2: Green, 3: Blue, 4: Yellow</p> <p>PVC 2 MM² CROSS SECTION: C 290 10x x=0: Black, 1: Red, 2: Green, 3: Blue, 4: Yellow</p>	<p>XXX CM: over cable length in cm</p>		
<p>BM TYPE</p> <p>R949 000 / Black R949 001 / Red R949 003 / Blue</p> <p>BDM TYPE</p> <p>R949 100 / Black R949 101 / Red</p> <p>DM TYPE</p> <p>R949 500 / Black R949 501 / Red</p>			

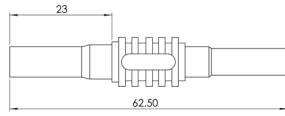
EXAMPLE TO ORDER
1 black BDSR plug / green PVC 1mm² with 80 cm / 1 Red BDM plug.
Part number: R949 100 / C290 012-80 cm / R949101

FOR FREE END: please write the word "free"

4 mm Series

ACCESSORIES
FEMALE / FEMALE ADAPTERS

These adapters allow for the connection between two standard patch cords with BM extremities.



PART NUMBER	COLOR
R941 960 600	Black
R941 961 600	Red

TEST CLIPS

FIGURE	DESCRIPTION	PART NUMBER	COLOR	SERIES	
	With sliding hook	R999 700 600	Black	4 mm safety series	
		R999 701 600	Red		
	With flexible steel rod test clip	R999 720 600	Black		
		R999 721 600	Red		
	Safety test probe	R941 850 600	Black		
		R941 851 600	Red		
		R941 850 000	Black		4 mm standard series
		R941 851 000	Red		

2 mm Series

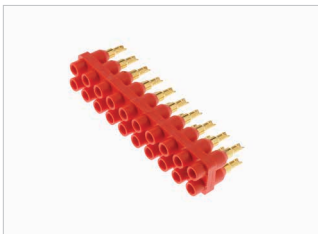
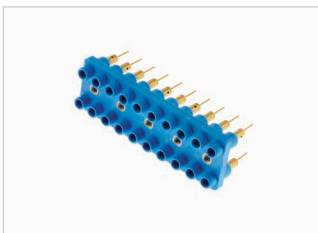
INTRODUCTION

Radiall's high-quality and reliable 2mm Series are designed for high-density test and measurement applications. This series includes a wide range of plugs, sockets, patch cords, test accessories, multiway connectors, short-circuit link, and other configurations.

- Plugs
- Patch cords
- 20-way fixed connector
- Contact block and ribbon patch cords
- Sockets
- PCB test points
- Short circuit links
- Accessories



20-WAY FIXED CONNECTORS



These connectors contain twenty 2 mm sockets molded into a low-profile housing. The tight pitch between sockets makes them particularly suitable for use in circuit breakers and test batteries.

ADVANTAGES

- Quick assembly time with single mounting operation for multi-connections
- Space savings
- Simplified panel piercing
- Orientation of solder shafts

Has the potential to be able to remove the cable harness without disconnecting each socket.

SHORT-CIRCUIT U LINKS



The short-circuit U link is a complementary component to the 20-way fixed connector and can be used to make shunts. It is fitted with a rear-mounted 2 mm socket.

2 mm Series

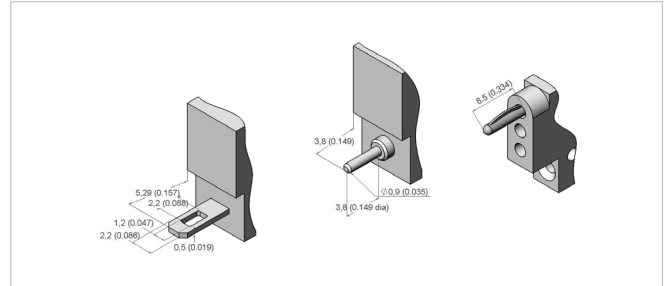
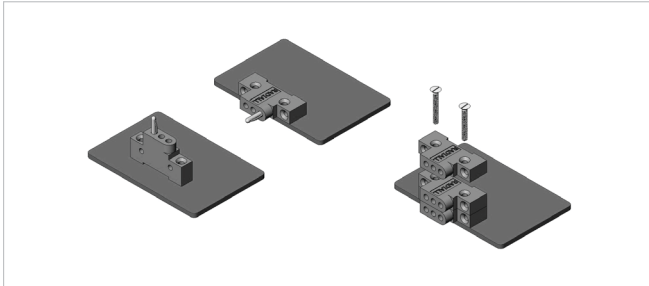
INTRODUCTION

2 MM CONTACT BLOCKS & RIBBON PATCH CORDS SERIES

This series includes:

Contact blocks and ribbon patch cords.

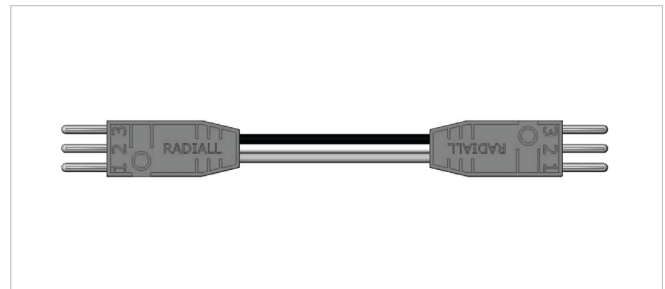
Dimensions of contact outlets and projections.



RIBBON PATCH CORDS

The contact blocks can mate with ribbon patch cords, which have:

- Excellent contact
- Sturdy construction
- Contact polarization options
- Low bulk
- High retention



They can be used for several field applications such as: electronics, laboratories, education and telecommunications.

PCB TEST SOCKET ACCESSORIES

Test sockets simplify testing and maintenance of equipment where direct contact with components should be avoided.

- **Test Socket entrax 10.16 mm:** This model, with the particular disposition of the pins, allows the immobilization on the circuit board. This version is particularly adapted for a wave soldering operation.
- **Test Socket entrax 5.08 mm:** This test socket is made up of a joined spiral spring with a nickel over plated protection.

TEST PROBE ACCESSORIES

An extra thin probe allows contact through coatings and some insulations. It can also be used for PCB measurements. They are fitted with a rear-mounted 2 mm socket and can be used with BLM and BLDM patch cords.

2 mm Series

CHARACTERISTICS

	PLUGS	SOCKETS	PATCH CORDS
--	-------	---------	-------------

ELECTRICAL CHARACTERISTICS

Current rating, max.	10A (@ 20 °C)	PVC cable 0.3mm ² section 5A (@ 20 °C)	
Dielectric withstanding voltage	1500 Vrms @ 50Hz		
Operating voltage	250 Vrms @ 50Hz		
Insulation resistance, min.	5000 mΩ		
Contact resistance, max.	1mΩ	-	

MECHANICAL CHARACTERISTICS

Mechanical, durability, min.	10,000 matings		
Average insertion force	14N		

ENVIRONMENTAL CHARACTERISTICS

Temperature range	Uninsulated -65 °C / +155 °C Insulated models -60 °C / +100 °C	-40 °C / +70 °C
-------------------	-------------------------------------------------------------------	-----------------

MATERIALS

Insulation	Thermoplastic
Contacts	Nickel or tin plated Copper alloy/brass

ELECTRICAL CHARACTERISTICS

	20-WAY FIXED CONNECTOR	SHORT-CIRCUIT U LINKS
Current rating, max.	7A (@20 °C)	
Dielectric withstanding voltage	2000 Vrms 50Hz	
Operating voltage	500 Vrms 50Hz	
Insulation resistance	5000 mΩ	

MECHANICAL CHARACTERISTICS

Mechanical, durability, min.	10,000 matings	
------------------------------	----------------	--

ENVIRONMENTAL CHARACTERISTICS

Temperature range	-40 °C / +125 °C	-40 °C / +70 °C
-------------------	------------------	-----------------

MATERIAL

Insulation	Self-extinguishable PBT UL 94V0	PVC
Contacts	Brass with gold plating	Brass/Bronze

2 mm Series

CONTACT BLOCKS & RIBBON PATCH CORDS

ELECTRICAL CHARACTERISTICS

Current rating, max. • Contact blocks • Ribbon patch cords	7A (@ 20 °C) 5A (@ 20 °C)
Dielectric withstanding voltage	1500 Vrms @ 50Hz
Operating voltage	250 Vrms @ 50Hz
Insulation resistance (insulated models)	5000 MΩ
Contact resistance	1mΩ

MECHANICAL CHARACTERISTICS

Endurance	>10,000 matings
------------------	-----------------

ENVIRONMENTAL CHARACTERISTICS

Temperature range • Contact blocks • Ribbon patch cords	-65 °C / +120 °C -40 °C / +85 °C
----------------------------------------------------------------------	-------------------------------------

MATERIALS

Insulation	Thermoplastic
Body	Nickel or tin plated (solder connection) Copper alloy / brass

ACCESSORIES

ELECTRICAL CHARACTERISTICS

	PCB TEST SOCKETS	TEST PROBE
Dielectric withstand voltage • Extra 10.16 model • Other models	1500 Vrms 50Hz 1000 V	1000 Vrms
Operating voltage	250 Vrms 50Hz	250 Vrms 50Hz

MECHANICAL CHARACTERISTICS

Insulation resistance	10,000MΩ	5000MΩ
------------------------------	----------	--------

ENVIRONMENTAL CHARACTERISTICS

Operating temperature	-40 °C / +100 °C	-25 °C / +70 °C
------------------------------	------------------	-----------------

PACKAGING

Plugs	100 pieces (except BDR-2=10 pieces)
PCB test sockets	100 pieces
Patch cords	10 pieces
20-way fixed connector	1 piece
Short-circuit u links	100 pieces
PCB test sockets	100 pieces
Test probe	10 pieces
Contact blocks	50 pieces
Ribbon patch cords	10 pieces

2 mm Series

PLUGS

UNINSULATED BANANA PLUGS

FIGURE	PART NUMBER	DESCRIPTION	PANEL DRILLING
	R921 019 000	Solder or crimp Strip length: 4 mm Crimp tool: Buchanan R612 548 000 Positioner Radiall R282 982 000 Cable: AWG 20, 22, 24	-
	R921 029 000	Threaded Rear length 4 mm	-
	R921 119 000	Nut-tin-plated solder Strip length: 4 mm Cable: AWG 20	P03
	R921 149 000	Male-female adapter with nut	P03

INSULATED BANANA PLUGS

FIGURE	PART NUMBER	COLOR	DESCRIPTION	PANEL DRILLING
	R921 330 000	Black	Tin-plated solder Cable: AWG 20	-
	R921 331 000	Red		
	R921 332 000	Green		
	R921 333 000	Blue		
	R921 334 000	Yellow		
	R921 336 000	White		
	R921 461 000	Red	Stackable plug with quick grip clamp 2 mm rear socket	-

2 mm Series

SOCKETS

UNINSULATED BANANA SOCKETS

FIGURE	PART NUMBER	DESCRIPTION	PANEL DRILLING
	R921 609 000	Tin-plated solder Panel mount: M3.5 x 0.35 thread Strip length: 4 mm Cable: AWG 20	P04
	R921 629 000	Tin-plated solder Panel mount: M4 x 0.5 thread Strip length: 4 mm Cable: AWG 20	P03

INSULATED BANANA SOCKETS

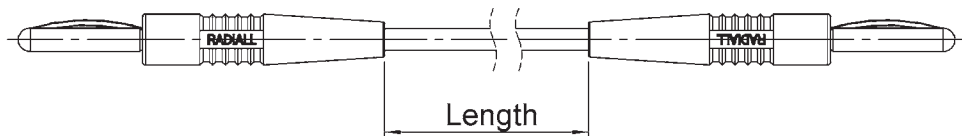
FIGURE	PART NUMBER	COLOR	DESCRIPTION	PANEL DRILLING
	R921 920 000	Black	Machined panel-mount socket Tin-plated solder termination Strip length: 4 mm Cable: AWG 20	P02
	R921 921 000	Red		
	R921 922 000	Green		
	R921 923 000	Blue		
	R921 924 000	Yellow		
	R921 926 000	White		
	R921 930 000	Black	Stamped panel-mount socket Tin-plated solder termination Strip length: 4 mm AWG 20 wire	P02
	R921 931 000	Red		
	R921 932 000	Green		
	R921 933 000	Blue		
	R921 934 000	Yellow		
	R921 936 000	White		

PATCH CORDS

Except where specified, all patch cords lengths are defined by the length of the cable without connectors or strain relief.

Radiall Patch Cord Series includes:

- **BLM:** Molded miniature extension patch cords
- **BLDM:** Molded miniature stackable patch cords
- **Patch cords made-to-order**



Each plug is soldered onto the cable in order to assure an excellent electrical connection with very stable transfer resistance.

2 mm Series

PLUGS

MOLDED EXTENSION (BLM)
Cable: PVC cable 0.3 mm²

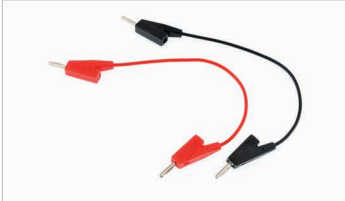


R928 0xx 000

PATCH CORDS LENGTH
1: 10 cm
5: 100 cm

COLOR
0: Black
1: Red
3: Blue

MOLDED STACKABLE (BLDM)
Cable: PVC cable 0.3 mm²



R928 1xx 000

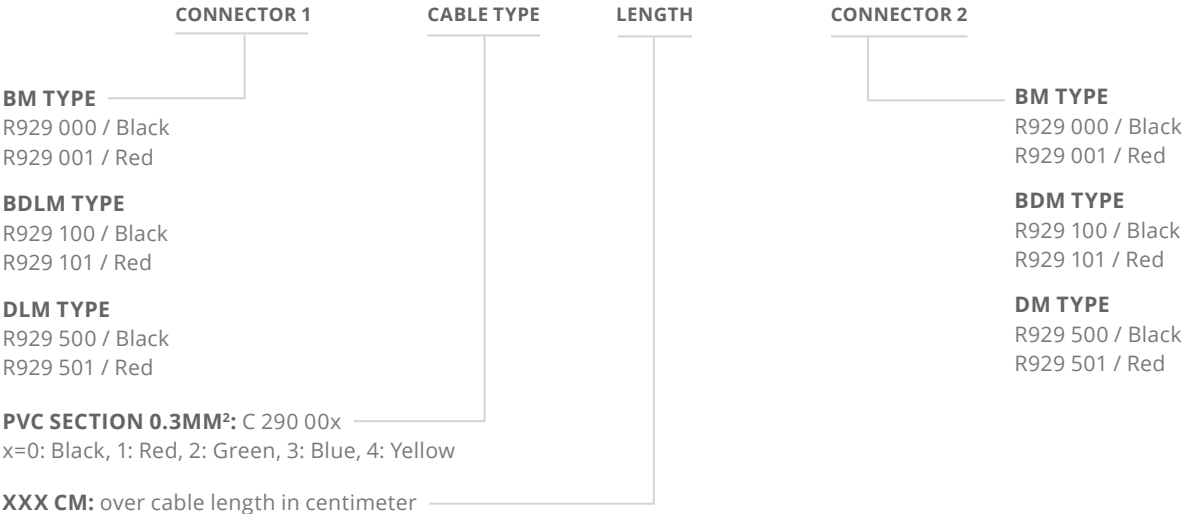
PATCH CORDS LENGTH
1: 10 cm
2: 20 cm
4: 50 cm
5: 100 cm

COLOR
0: Black
1: Red
2: Green
3: Blue
4: Yellow

MADE-TO-ORDER PATCH CORDS

Customized patch cords using BLM, BLDM, or DLM plugs can be made-to-order to your specifications. Choices include connector style, cable type, color, and cable length. Packaging: 10 identical patch cords.

HOW TO ORDER



FOR FREE END: please write the word "free"

EXAMPLE TO ORDER:
1 black BLM extremity / red PVC cable length 40 cm / 1 red BLM plug.
Part number: R929 000 / C290 001-40 cm / R929501

2 mm Series

20-WAY FIXED CONNECTORS

12 MM CONTACT PITCH

FIGURE	PART NUMBER	COLOR	TERMINATION
	R929 991 000	Blue	Solder cup
	R929 991 001	Red	
	R929 991 002	Green	
	R929 991 003	Black	
	R929 991 004	Yellow	
	R929 992 000	Blue	Pin

6 MM CONTACT PITCH

FIGURE	PART NUMBER	COLOR	TERMINATION
	R929 993 000	Blue	Solder cup
	R929 993 001	Red	
	R929 993 002	Green	
	R929 993 003	Black	
	R929 994 003	Black	Pin

SHORT-CIRCUIT U LINK

12 MM CONTACT PITCH

FIGURE	PART NUMBER	COLOR
	R644 543 000	Blue
	R644 543 001	Red
	R644 543 002	Green
	R644 543 003	Black
	R644 543 004	Yellow

6 MM CONTACT PITCH

FIGURE	PART NUMBER	COLOR
	R644 543 020	Blue
	R644 543 021	Red
	R644 543 022	Green
	R644 543 023	Black
	R644 543 024	Yellow

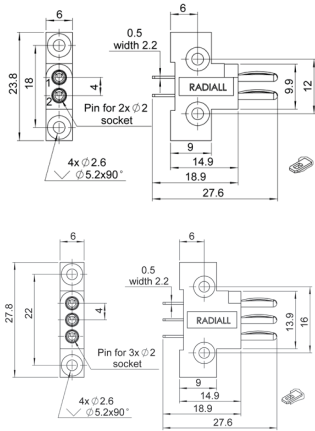
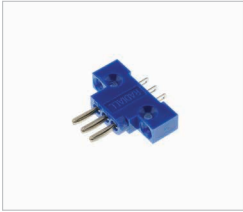
2 mm Series

CONTACT BLOCKS

The contact blocks are available for different types of connections:

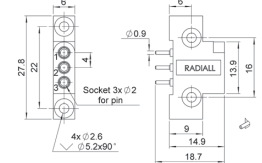
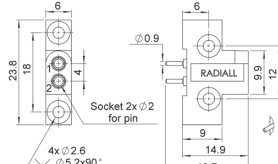
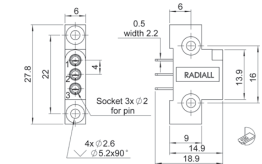
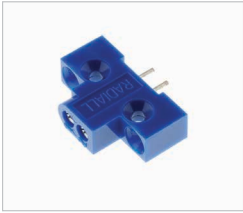
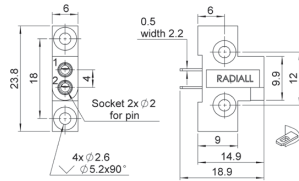
- Wire soldering
- Straight pins for PCB
- Elbow pins for PCB (contact your Radiall sales representative)
- Wrapping pins (contact your Radiall sales representative)

MALE CONTACT BLOCKS



PART NUMBER	NOTE
R644 020 000	Tin-plated solder cup
R644 030 000	

FEMALE CONTACT BLOCKS



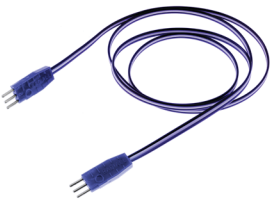
PART NUMBER	NOTE
R644 120 000	Tin-plated solder cup
R644 130 000	
R644 121 000	PCB Pins
R644 131 000	

2 mm Series

RIBBON PATCH CORDS

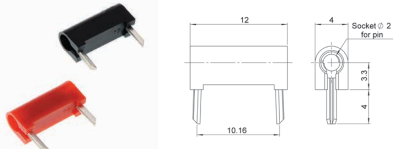
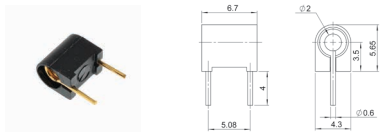
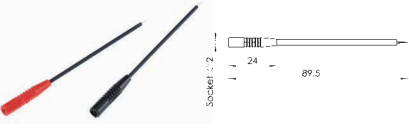
The contact blocks are available for different types of connections:

MALE-MALE RIBBON PATCH CORDS 100 CM LENGTHS

FIGURE	PART NUMBER	DESTINATION	NUMBER OF CONTACT
	R644 823 000	ML 2 mm	2
	R644 833 000	ML 3 mm	3

ACCESSORIES

TEST SOCKETS & TEST PROBE

FIGURE	PART NUMBER	COLOR	DESCRIPTION
	R921 910 000	Black	Test socket entrax 10.16 mm
	R921 911 000	Red	
	R921 912 000	Green	
	R921 913 000	Blue	
	R921 914 000	Yellow	
	R921 916 000	White	
	R921 820 070	Black	Test socket entrax 5.08 mm
	R921 820 071	Red	
	R921 820 072	Green	
	R921 820 073	Blue	
	R921 820 074	Yellow	
	R921 820 076	White	
	R921 850 000	Black	Test probe
	R921 851 000	Red	

Banana Adapters

INTRODUCTION

The connection may be attached to a coaxial line. You will find at the end of the catalog the adapters which allow connecting between 2 mm and 4 mm or between BNC coaxial connectors with banana plugs for both 2 mm and 4 mm connectors.



CHARACTERISTICS

	2 MM / 4 MM ADAPTER	BNC / 2 MM ADAPTER	BNC / 4 MM ADAPTER	ADAPTER PATCH CORDS
--	---------------------	--------------------	--------------------	---------------------

ELECTRICAL CHARACTERISTICS

Current rating, max.	10A (@ 20 °C)	-	5A (@ 20 °C)
Dielectric withstanding voltage	1500 Vrms @ 50 Hz	Two: 2500 Vrms @50 Hz One-way: 750 Vrms @50 Hz	1500 Vrms @ 50 Hz
Operating voltage	250 Vrms @ 50 Hz	-	250 Vrms @ 50 Hz
Insulation resistance (insulated models)	5000 MΩ	Two: 5000 MΩ One-way: 5000 MΩ	5000 MΩ

ENVIRONMENTAL CHARACTERISTICS

Temperature range	-40 °C / +70 °C	-40 °C / +100 °C	-40 °C / +70 °C
-------------------	-----------------	------------------	-----------------

MATERIALS

Insulator (banana plug / socket side)	Thermoplastic
Electrical contacts	Nickel or tin plated Copper alloy/brass


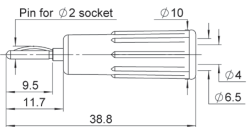
PACKAGING

DESCRIPTION	PACKAGING
2 mm / 4 mm	100 pieces
BNC / 2 mm	1 piece
BNC / 2 mm	1 piece
Patch cords	10 pieces


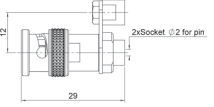
2 mm Series

ADAPTERS

2 MM PIN TO 4 MM SOCKET ADAPTERS


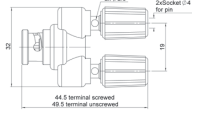

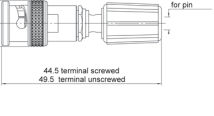

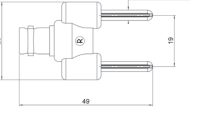
FIGURE	PART NUMBER	COLOR	NOTE
 	R921 390 000	Black	2 mm male - 4 mm female adapter
	R921 391 000	Red	

2 MM TO BNC ADAPTERS

FIGURE	PART NUMBER	COLOR	NOTE
 	R191 450 000	Black	Packaging individually

4 MM TO BNC ADAPTERS

These adaptors are designed to uncouple electric signals from input and output terminals of a measuring device fitted with male or female BNC fixed connectors.

FIGURE	PART NUMBER	NOTE
 	R191 453 000	BNC: male Banana: two 4 mm sockets
 	R191 454 000	BNC: male Banana: one 4 mm socket
 	R191 455 000	BNC: female Banana: two 4 mm plugs

Banana Adapters

ADAPTERS PATCH CORDS

BANANA ADAPTER PATCH CORDS

Patch cords are designed to provide continuity between two pieces of equipment or create patch cords with 2 mm interfaces on one end and 4 mm interface on the other.


Cable Type: 0.3 mm², PVC

FIGURE	PART NUMBER	COLOR	CONFIGURATION
	R999 251 000	Red	BLM / BM 100 cm length
	R999 350 000	Black	BLDM / BDM 100 cm length
	R999 351 000	Red	
	R999 352 000	Green	
	R999 353 000	Blue	
	R999 354 000	Yellow	
	R999 520 000	Black	BLM / DM 20 cm length
	R999 521 000	Red	

COAXIAL PATCH CORDS/4 MM BANANA PLUG

BCX COAXIAL PATCH CORDS

The BCX coaxial cords are normally connected to the terminals of measuring devices in order to uncouple the central core from the braid of a coaxial cable. The BCX plug is non-removable. The cable core is soldered to the center contact and the braid is soldered to the socket.

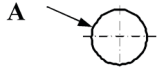
FIGURE	PART NUMBER	COLOR	CONFIGURATION
	R948 450 000	Black	Length: 100 cm (with connectors)

Banana Adapters

PANEL DRILLING

P01

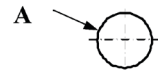
PANEL CUT OUT



mm		
	Maxi	mini
A	6.2	6.1

P02

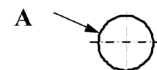
PANEL CUT OUT



mm		
	Maxi	mini
A	5.2	5.1

P03

PANEL CUT OUT



mm		
	Maxi	mini
A	4.2	4.1

P04

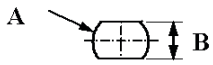
PANEL CUT OUT



mm		
	Maxi	mini
A	3.7	3.6

P05

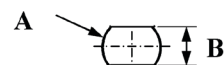
PANEL CUT OUT



mm		
	Maxi	mini
A	12.2	12.1
B	11.2	11.1

P06

PANEL CUT OUT



mm		
	Maxi	mini
A	8.2	8.1
B	7.2	7.1

Note

Note