

Connecting with the future



RCC45[®] – The connection talent
RJ45 connection module with options for
Plastic Optical Fiber (POF) or power

R&M – A decision with a future

As an independent Swiss family business, R&M has over 40 years of experience in information and communications technology. We offer passive cabling solutions with added value in four business segments: enterprise, carrier, residential and industrial cabling. Our copper and fiber optics products for (Layer 1) data and communications networks lead the field in both engineering and quality, and their most striking feature is that they are strictly geared to our customers and their needs.

R&M solutions set standards for modularity, quality and ease of installation and maintenance. As a partner and customer of R&M, you have found the right track into the future, because our products turn new market potentials into practical possibilities. And they are always compatible with existing installations.

The customer stands at the centre of our product development, so R&M solutions are tailored to his needs. That's what makes us so innovative. Every year, we invest almost 10% of our turnover in research and development, in order to keep our leadership in engineering and quality. And with great success! We are now earning 35% of our turnover from products that are less than three years old.

We have made ourselves the market leaders in Switzerland, and internationally we continue to grow. R&M is represented by subsidiaries in eight countries, and qualified marketing partners look after our customers around the world.

R&M is your partner in the enterprise, carrier, residential and industrial cabling business segments.

Enterprise cabling embraces cabling solutions for businesses of every kind. Carrier cabling is aimed at telecom groups, regional network operators and city carriers. Residential cabling is targeted at the market for universal networks in the domestic and home office domain. In the industrial cabling business segment, R&M develops special solutions to meet the tough requirements of industrial networks.

A comprehensive service package supplements our product range. It extends from qualified advice and training through fast customer support and on up to modern information and communications services.

RCC45[®] – The next generation plug

The new dimension in connection technology comes from R&M, and its name is RCC45[®]. This innovation incorporates fiber optic or power cabling into the RJ45 plug. Its modular design opens up new prospects in enterprise and residential cabling. RCC45[®] increases the added value of installations while ensuring investment protection. With RCC45[®], R&M is responding to the demands of the market for integrated interfaces that fit the widest variety of networks. Make good use of this potential!

get more RCC45[®] – The Connection Talent

More investment protection

- Additional modularity due to integral power or POF interface
- Free choice of cabling solution
- Open to future technologies (Power, POF, GOF) and subsequent integration

More security

- Option of signalling over POF
- EMC with transmission over POF
- Up to 200 W of power over the new power contacts
- Power connector using the new crimp/solder contacts
- Innovative POF screw-ferrule technology

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Whether modernising and extending existing data networks or setting up new installations, investors and users keep on asking for integrated solutions and options for the future. Tomorrow, someone who is currently using Ethernet may well need additional multimedia cabling with POF (plastic optical fiber), and the day after, he may want to integrate building-automation functions – preferably with everything using just one plug system and cabling outlet. IT, telecommunications and media applications are converging, which means there is a growing demand in the office and home office world for flexible, convenient interfaces. The time is ripe for new hybrid cabling solutions, and with the RCC45[®] range, R&M's partners already have the solution in their hands.

DESIGN AND INSTALLATION

RCC45[®] is the logical further development of the RJ45 interface. Two additional smartholes in the plug interface are a unique recognition feature of the RCC45[®] module. They are securely embedded in the plastic body and – depending on the customer's wishes – can accept either power contacts or ferrules for POF terminations. Holders for the additional cables are simply clipped on to the plugs. Fibers and RCC45[®] modules can be installed in minutes using the handy tools and convenient terminal blocks provided by R&M.



Another innovation from R&M: the RJ45 module becomes the RCC45[®] with options for POF, power and more.



PROTECTION

The underlying principle is capitalising on existing hardware. This holds good for all R&M product developments. In line with this product philosophy, the new RCC45[®] module can be secured to the single-channel module holder plate that is already on the market. So customers can go on using their existing R&M patch panels, outlets etc. when upgrading their networks.

Any existing cabling can easily be expanded to include Cat. 5e modules, Cat. 6 modules, RCC45[®] or even the SC-RJ optical cable duplex adapter. The new systems are compatible in every respect. And all stages of the R&M security system continue to function when RCC45[®] modules are used.

APPLICATIONS AND USES

RCC45[®] modules are the best way to combine POF cabling with a LAN. Plastic optical fiber (POF) is robust and flexible, and can be laid quickly at low cost. The IEEE 1394b fast serial bus, which is finding increasing success in the networking of PCs and peripherals, digital audio and video equipment and cameras, can cover only a few metres over copper cables. Over a POF backbone, it can cover the entire building! Then, it can be used for flexible office, telecommunications and multimedia applications, or for video monitoring and facility management.

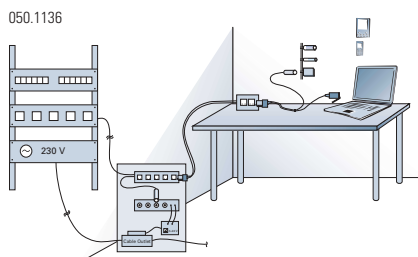
A second option is to integrate power cabling, with a maximum supply voltage of 50V at 4 Amperes. RCC45[®] modules take all the cables together to terminal equipment such as telephone systems, laptops, printers or scanners. The mains supply can be positioned centrally at the hub or somewhere else out of the way.

Further possible applications are planned.

POWER APPLICATIONS

RCC45[®] allows the integration of power cabling, with a maximum supply voltage supply of 50 Volts at 4 Amperes. For installation, the power contacts are inserted into the smartholes in the socket or clipped to the plug.

RCC45[®] modules take all the cables together to terminal equipment such as telephone systems, laptops, hand-helds, printers or scanners. The mains supply can be positioned centrally at the hub or somewhere else out of the way.



Hybrid, structured cabling system incl. voltage and power supply.

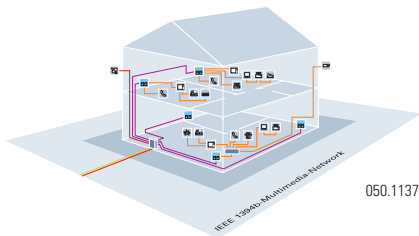
SPECIFICATIONS OF THE POWER CONTACTS

The RCC45[®] power contacts are made of brass and designed for longevity and superlative reliability. The surfaces are refined with Au/Ni. Among other things the socket features a finger clip (Cu/Be) with excellent performance characteristics. The connector pin has a round shape ensuring a constant strength for easy plugging in and out.

Current carrying capacity	4 A
Equipment voltage	up to 50 V
Contact resistance	10 mΩ
Mating cycles	500
Surface treatment	0.5 μAu / 2.5 μNi
Environmental category	-10/+50°C
Dielectric strength	contacts 1000 V shield/environment 1500 V
Wire diameter	up to max. AWG 18 (27 × 0.21)
Connection technique	crimping or soldering

POF APPLICATIONS

RCC45® supports the use of plastic optical fiber (POF). The ferrules are inserted into the smartholes in the interfaces in next to no time. With the R&M toolkit for POF installations the fiber is assembled in less than one minute and simply inserted into the socket.



Structured cabling for IEEE 1394b multimedia network

POF facilitates an economic and flexible realisation of optical network solutions up to the desktop. This robust plastic fiber lets the vision of an all-optical network move closer. The following applications are in preparation or can already be realised:

- Ethernet over POF
- Video over POF
- IEEE 1394b over POF
- TV over POF

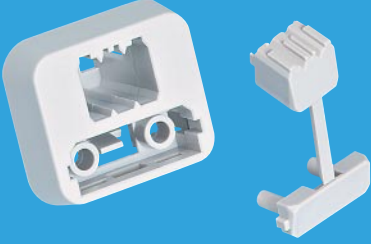
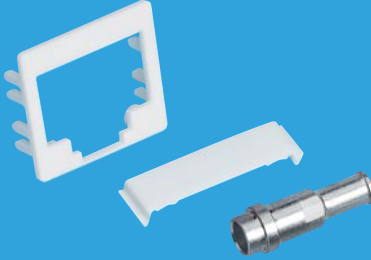
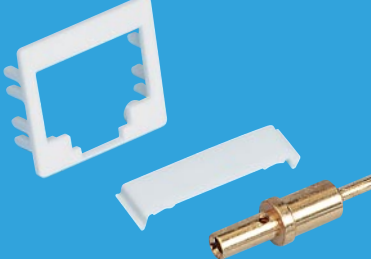

SPECIFICATIONS OF THE POF


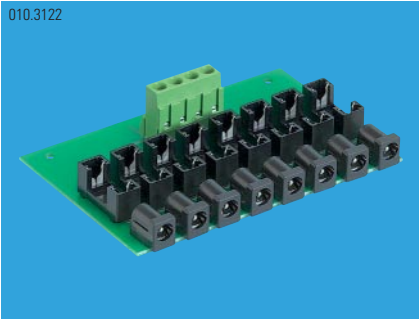

Maximum values			
Parameter	Einheit	Min.	Max.
Storage temperature	°C	-50	+85
Operating temperature	°C	-40	+85
Installation temperatur	°C	-20	+70
Tensile strength (short term < 30min)	Single channel	N	50
	Dual channel	N	100
Tensile strength (> 30min)	N	1	
Minimum bending radius (short term)	mm	25	
Minimum bending radius	mm	35	

Mechanical/optical characteristics				
Parameter	Unit	Min.	Typ. [1]	Max.
Attenuation fiber	dB/m	0.12	0.19	0.24
Attenuation cable	dB/m	0.15	0.22	0.27
Numerical aperture (> 2m)	[-]	0.46	0.47	0.50
Diameter, core and cladding	mm	0.94	1,00	1.06
Diameter primary coating	mm	2×2.13	2 x 2.20	2×2.27
Propagation Delay Constant	ns/m		5.0	
Refractive index	core	[-]	1.492	
	cladding	[-]	1.417	

Note: typical data at 25°C.


RCC45[®] Connection Module and Adapter

Ordering information	Description	Packing unit	Part number
<p>010.2721</p> 	<p>RCC45[®] Connection Module Cat. 5e, 1 × RJ45/u RCC45[®] connection module featuring one unshielded RJ45 port. Including dust cover, cable tie and instruction manual.</p>	10	R308254
<p>010.2727.5/010.2727.6</p> 	<p>RCC45[®] Adapter POF Adapter for one F-05 or F-07 plug connector. Including dust covers and instruction manual. Colour: white/RAL 9010</p>	10	R308255
<p>010.2727.3/010.2727.2/010.2727.11</p> 	<p>RCC45[®] Ferrule Set POF, 980/1000/2200 Each set includes: – Two RCC45[®] ferrules – RCC45[®] clip – RCC45[®] dust cover</p> <p>In addition, the 10-piece packing unit contains: – Instruction manual – RCC45[®] turning tool – RCC45[®] clamping tool</p>	10	R307419
<p>010.2727.3/010.2727.2/010.2727.8</p> 	<p>RCC45[®] Module Contact Set, Power This set includes: – Two RCC45[®] module contacts – RCC45[®] clip – RCC45[®] dust cover – Instruction manual</p>	10	R308256
<p>010.2767/010.2727.9</p> 	<p>RCC45[®] Plug Contact Set, Power This set includes: – Two RCC45[®] plug contacts – RCC45[®] plug adapter, top part – RCC45[®] plug adapter, bottom part – Instruction manual</p>	10	R308257

Ordering information	Description	Packing unit	Part number
<p>010.3119</p> 	<p>RCC45® 19" 1U Patch Panel Power 19" 1U patch panel for 4 RCC45® power print modules (32 outlets)</p> <p>Supplied:</p> <ul style="list-style-type: none"> – 19" 1U patch panel – 1x RCC45® power print module of 1x8 outlets (R310336) – Labelling strips – Fastening screws for print – Wiring instructions 	1	R310363
<p>010.3122</p> 	<p>RCC45® Print Module Power, 1x8 outlets Print module for the RCC45® 19" 1U Patch Panel Power.</p> <p>Max. in: 32A (4 mm²) Max. out: 4A 48V</p> <p>Print module comprises:</p> <ul style="list-style-type: none"> 8 power jacks 2,5 x 5,5 mm 8 fuse holders 5 x 20 mm (without fuses) 1 connection 4x4 mm² – Wiring instructions 	1	R310336
<p>010.1673</p> 	<p>Protective Conductor Terminal 6 mm² For the simple and efficient earth connection. Accommodates one stranded cable with a max. cross section of 6 mm². Can be used with all metal patch panels (1U 24 port and voice panel 50 x RJ45) as well as with Global System.</p>	1	R302150

RCC45[®] Installation Cables

Ordering information	Description	Packing unit	Part number
 <p>010.2725</p>	<p>RCC45[®] Hybrid Cable U/UTP Cat. 5e + POF, LSOH Unshielded installation cable, 100 Ohm, for frequencies up to 125 MHz. Dimensions: 4 × 2 × 0.5mm and 2 × SI-POF 980/2200</p>	305 m	R308592
 <p>010.2726</p>	<p>RCC45[®] Hybrid Cable U/UTP Cat. 5e + Power, LSOH Unshielded installation cable, 100 Ohm, for frequencies up to 125 MHz. Dimensions: 4 × 2 × 0.5mm and 2 × AWG 18 (1mm²)</p>	305 m	R308599
 <p>010.2724</p>	<p>RCC45[®] Hybrid Cable U/UTP Cat. 5e + tube, LSOH Unshielded installation cable, 100 Ohm, for frequencies up to 125 MHz. Dimensions: 4 × 2 × 0.5mm and empty tube ø 6 mm, plus drawing cord</p>	305 m	R308852

 Technical data available on request.

010.2768



All it needs for the field assembly of the POF screw-ferrules are the RCC45® tools. The compact and efficient set, limited to a few parts, allows fast and easy handling.

Features:

- easy handling
- 2 ferrules in less than 2 min.
- light and compact
- mains supply independent
- no adhesives or crimping
- ferrules are reusable

Ordering information**Description****Packing unit****Part number**

010.2769

**RCC45® Toolbox POF, complete**

For the field-assembly of POF ferrules.

Supplied:

- Stripping tool
- Spare blades
- Mounting kit for ferrules
- Polishing plate
- Polishing pad
- Paper clip
- Sanding sheet
- Polishing sheet
- Cleaning tissues
- Instruction manual

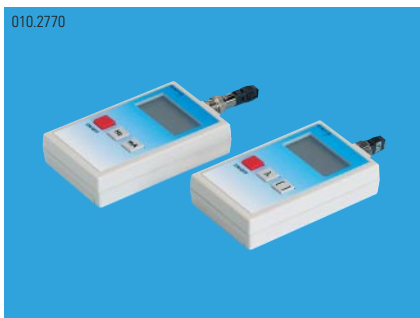
Without crimping pincers

Without measuring equipment

1

R308366

010.2770

**RCC45® Measuring Equipment POF**

To measure the attenuation of the POF connection at wavelength 650nm

This set includes:

- Source (with F-05 adapter)
- Power meter (with F-05 adapter)
- Instruction manual
- No measuring cable, see p.12 (F-07/F-05)

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R308604

010.2771

**RCC45® Crimping Pincers for Power Contacts**

4-point crimping pincers to effectuate the power contacts in module and plug.





This set includes:


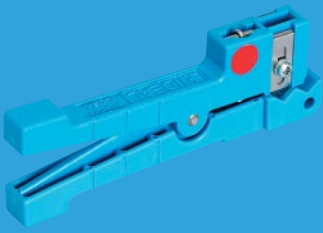

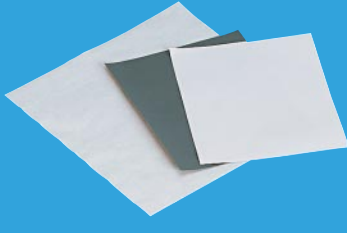
- Crimping pincers
- Mounting aid
- Instruction manual

1

R308853

RCC45[®] Patch Cord (POF, Power)

Ordering information	Description	Packing unit	Part number
 <p>010.2772</p>	<p>POF Patch Cord 2 × 980/1000/2200 F-07 – F-07, length 1 m F-07 – F-07, length 2 m F-07 – SMI, length 1 m F-07 – SMI, length 2 m</p> <p>RCC45[®] Measuring Cable Measuring cable to the measuring equipment from page 11 F-07 – F-05, length 1 m</p>	<p>10 10 10 10 10</p>	<p>R308589 R308591 on request on request R308854</p>
 <p>010.3123 / 010.3125</p>	<p>RCC45[®] Connection Cable Power (outlet) This power connection cable for use at the workplace can be subsequently mounted to standard R&M patch cord.</p> <p>Supplied: Side A: RCC45[®] power adapter Side B: Interchangeable DC Plug Set with adjustable polarity tips.</p> <p>Incl. coaxial Power Plug: 2.1 x 5.5 mm 2.5 x 5.5 mm 1.7 x 4.0 mm 1.4 x 3.5 mm 1.1 x 3.0 mm 0.7 x 2.35 mm</p> <p>Phone Plug 3.5 mm 2.5 mm</p>	<p>10 10</p>	<p>R310310 R310311</p>
 <p>010.3123</p>	<p>RCC45[®] Patch Cord Power (Panel) This power patch cord can be subsequently mounted to standard R&M patch cord plug.</p> <p>Supplied: Side A: RCC45[®] power adapter Side B: Coaxial Power Plug 2.5 x 5.5 mm, matching the print module (R310336)</p>	<p>10 10</p>	<p>R310307 R310308</p>
 <p>010.3120</p>	<p>RCC45[®] PoE Patch Cord, 5e, U/UTP, PVC Connection cable for Power-over-Ethernet (IEEE 802.3af) applications. Two conductor pairs from the cord are routed into the RCC45[®] power adapter. max. 350 mA, max. 48 V</p> <p>Supplied: Side A: RJ45 with RCC45[®] power adapter Side B: RJ45</p>	<p>10 10</p>	<p>R309668 R309670</p>

Ordering information	Description	Packing unit	Part number
<p>010.2773</p> 	<p>RCC45[®] Polishing Plate POF 4-hole polishing plate with a hard-metal plate for 2.5 mm-POF ferrules.</p>	1	R308419
<p>010.2774</p> 	<p>RCC45[®] Stripping Tool POF Special 2-blade stripping tool to cut and strip in one single go.</p>	1	R308421
<p>010.2727.7/010.2727.10</p> 	<p>RCC45[®] Spare Blades Set POF Special blades for R308421 Supplied: 10 spare blades 1 setting gauge Installation manual For fiber types 980/1000/2200</p>	1	R308367
<p>010.2775</p> 	<p>RCC45[®] Consumables POF</p>		
	<p>RCC45[®] Sanding Foil POF To pre-polish the POF</p>	10	R308360
	<p>RCC45[®] Polishing Foil POF To polish the POF</p>	10	R308362
	<p>RCC45[®] Cleaning Tissue POF Dry</p>	10	R308363

Ordering information	Description	Packing unit	Part number
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RCC45[®] Tooly
 A small tool that can do great things:
 Remove the module holder plate
 Remove the POF adapter frame
 Remove the clip

1 R308261

First-hand service and information

Further strong points of the RCC45[®] programme are our customer-friendly services, and cutting-edge media and material for distributors, traders, planners, and installers. R&M always supplies you with first-hand information. Just try us!

- We supply you with:
- clearly and consistently structured product catalogues
 - comprehensive planning and installation support
 - white papers, instruction sheets, data sheets
 - customer magazine CONNECTIONS
 - electronic media, interactive CD-ROM, screen saver
 - personal training, symposia, workshops
 - business management, advertising and marketing tools
 - support, consulting

Exclusive: The RCC45[®] World

Have a say in the future of cabling. Enter the RCC45[®] world and discover a multitude of further possible applications of the the next generation plug. R&M sets up a communication network between RCC45[®] partners, and continuously informs you about further developments of the programme, installation and application options. Follow the path to RCC45[®] at the R&M website www.rdm.com.

There you can subscribe to the RCC45[®] Newsletter keeping you up-to-the-minute with news. Furthermore, you can talk to the R&M RCC45[®] team directly, address your questions and suggestions, exchange experiences with other experts and users or download the RCC45[®] screen saver.

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