

get **more** 010.2936

**Solutions from A to Z**

- High network availability through R&M quality standard
- Neat and clear patching with colour coding
- Every single cable is factory tested
- System cables with warranty concept

@ **R&M**



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## RJ45 Patch Cords, Cat. 5e and Cat. 6

### Introduction

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R&Mfreenet Cat. 5e patch cords are used for connecting network equipment to patch panels and telecommunications outlets. Cat. 5e patch cords can transmit frequencies up to 100 MHz.

#### Features of Cat. 5e

- Fully comply with the relevant cabling standards (ISO/IEC 11801, EN 50173, EN 50168 and EIA/TIA 568A/B)
- Fulfil the latest testing specifications of the EIA/TIA 568A Amendment 4 (Patch Cord Qualification Test)
- Assembled with RJ45 connectors according to IEC 603.7
- Optional patch cord colour distinction in various colours for transmission link identification
- Come in shielded and unshielded versions
- Lengths of 0.5 – 20 m available
- Impedance of 100 Ohm
- Come in PVC and LSFROH versions
- New strain relief with extended functions according to TIA/EIA-568-B.1-1, colour coding
- R&M Security System compliant
- R&M Environment System compliant
- Unleaded in accordance with EU directives
- Directly mountable into R&M's mechanical Data Safe Lock coding

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R&Mfreenet Cat. 6 patch cords are used for connecting network equipment to patch panels and telecommunications outlets. Cat. 6 patch cords can transmit frequencies up to 250 MHz.

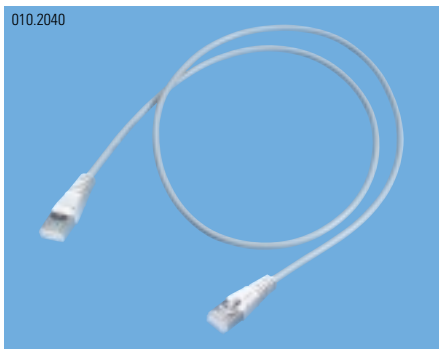
#### Features of Cat. 6

- Fulfil the requirements of Category 6, Class E (250 MHz) according to the present standard proposals of the ISO/IEC 11801 2nd edition
- Fulfil the Cat. 6 values of the components standard IEC 60603-7-4. or IEC 60603-7-5 with the Cat. 6 Connection Module
- Each patch cord is tested for transmission performance
- Can also be used as Cat. 5e (backwards compatible)
- Optional colour distinction in various colours for service identification
- New strain relief with extended functions
- Strain relief functions in accordance with TIA/EIA-568-B.1-1
- Labelling possible on the strain relief sleeve or colour coding
- Directly mountable into R&M's mechanical Data Safe Lock coding
- Come in shielded and unshielded versions
- Lengths of 0.5 – 20 m available
- Impedance of 100 Ohm
- Come in LSOH and LSFROH versions
- R&M Security System compliant
- R&M Environment System compliant
- Unleaded in accordance with EU directives

## Patch Cord Characteristics Cat. 5e

	U/UTP	SF/UTP
Inner conductor diameter	Stranded copper AWG26/7	Stranded copper AWG26/7
Number of pairs	4	4
Screen per pair	No	No
Outer screen	No	Cu-braid + AL/polyester foil
Jacket	PVC	LSFROH
Overall diameter	5.1 mm	5.5 mm
Bending radius	25 mm	30 mm

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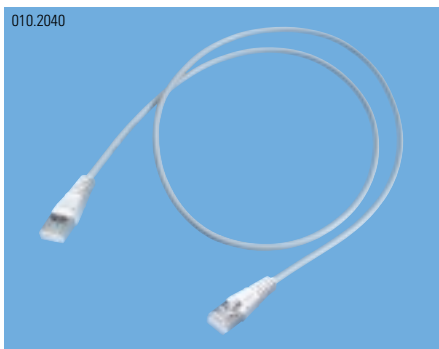
## Patch Cords, unshielded

## U/UTP 4P, PVC, Cat. 5e

Connection 1:1

Length [m]	Jacket PVC	Packing Unit	
0.5	R305014	10	CLASSIC.system
1.0	<b>R305015</b>	10	CLASSIC.system
1.5	R305019	10	CLASSIC.system
2.0	<b>R305020</b>	10	CLASSIC.system
3.0	<b>R305021</b>	10	CLASSIC.system
5.0	<b>R305022</b>	10	CLASSIC.system
7.5	R305023	10	CLASSIC.system
10.0	<b>R305024</b>	10	CLASSIC.system
12.5	R305025	5	CLASSIC.system
15.0	R305026	5	CLASSIC.system
20.0	R305027	5	CLASSIC.system

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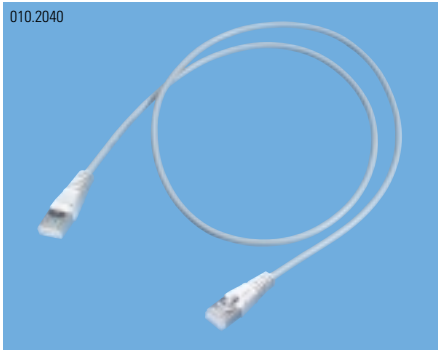
## Patch Cords, shielded

## SF/UTP 4P, LSFROH, Cat. 5e

Connection 1:1

Length [m]	Jacket LSFROH	Packing Unit	
0.5	R305039	10	CLASSIC.system
1.0	<b>R305040</b>	10	CLASSIC.system
1.5	R305041	10	CLASSIC.system
2.0	<b>R305042</b>	10	CLASSIC.system
3.0	R305043	10	CLASSIC.system
5.0	<b>R305044</b>	10	CLASSIC.system
7.5	R305045	10	CLASSIC.system
10.0	<b>R305046</b>	10	CLASSIC.system
12.5	R305047	5	CLASSIC.system
15.0	R305048	5	CLASSIC.system
20.0	R305049	5	CLASSIC.system

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**Patch Cords, shielded/unshielded  
SF/UTP 4P, LSFROH, Cat. 5e**

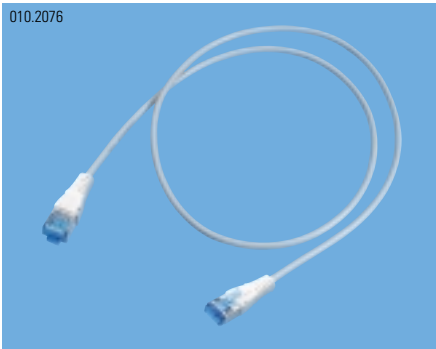
Connection 1:1

Length [m]	Jacket LSFROH	Packing Unit	
0.5	R305061	10	CLASSICsystem
1.0	R305062	10	CLASSICsystem
1.5	R305063	10	CLASSICsystem
2.0	R305064	10	CLASSICsystem
3.0	R305065	10	CLASSICsystem
5.0	R305066	10	CLASSICsystem
7.5	R305067	10	CLASSICsystem
10.0	R305068	10	CLASSICsystem
12.5	R305069	5	CLASSICsystem
15.0	R305070	5	CLASSICsystem
20.0	R305071	5	CLASSICsystem

**Patch Cord Characteristics Cat. 6**

	U/UTP	S/FTP
Inner conductor diameter	AWG26/7	AWG26/7
Number of pairs	4	4
Screen per pair	No	AL/polyester foil
Outer screen	No	Cu-braid
Jacket	LSOH	LSFROH
Overall diameter	5.6 mm	6 mm
Bending radius	25 mm	30 mm

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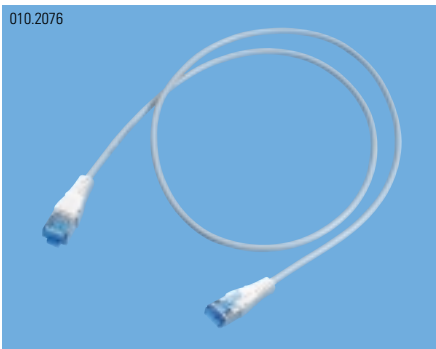


**Patch Cords, unshielded  
U/UTP 4P, LSOH, Cat. 6**

Connection 1:1

Length [m]	Jacket LSOH	Packing Unit	
0.5	R302309	10	<a href="#">STARsystem</a>
1.0	R302310	10	<a href="#">STARsystem</a>
1.5	R302311	10	<a href="#">STARsystem</a>
2.0	R302312	10	<a href="#">STARsystem</a>
3.0	R302313	10	<a href="#">STARsystem</a>
5.0	R302314	10	<a href="#">STARsystem</a>
7.5	R302315	10	<a href="#">STARsystem</a>
10.0	R302316	10	<a href="#">STARsystem</a>
12.5	R302317	5	<a href="#">STARsystem</a>
15.0	R302318	5	<a href="#">STARsystem</a>
20.0	R302319	5	<a href="#">STARsystem</a>

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**Patch Cords, shielded  
S/FTP 4P, LSFROH, Cat. 6**

Connection 1:1

Length [m]	Jacket LSFROH	Packing Unit	
0.5	R302331	10	<a href="#">STARsystem</a>
1.0	<b>R302332</b>	10	<a href="#">STARsystem</a>
1.5	R302333	10	<a href="#">STARsystem</a>
2.0	<b>R302334</b>	10	<a href="#">STARsystem</a>
3.0	<b>R302335</b>	10	<a href="#">STARsystem</a>
5.0	<b>R302336</b>	10	<a href="#">STARsystem</a>
7.5	R302337	10	<a href="#">STARsystem</a>
10.0	<b>R302338</b>	10	<a href="#">STARsystem</a>
12.5	R302339	5	<a href="#">STARsystem</a>
15.0	R302340	5	<a href="#">STARsystem</a>
20.0	R302418	5	<a href="#">STARsystem</a>

The entire Cat. 6 product range is also available in the following colors:

Yellow	RAL1021
Red	RAL1021
Blue	RAL1021
Green	RAL1021

## RJ45 Consolidation Point Cables

### Cat. 5e and Cat. 6

#### Introduction

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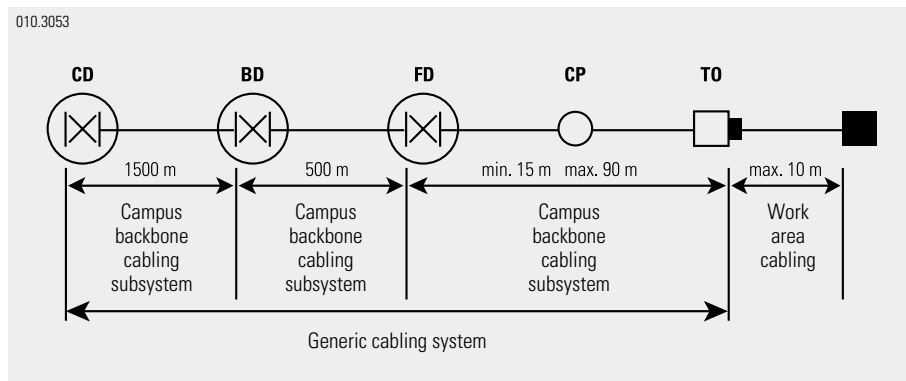
CP cables are being more and more widely used in horizontal cabling of open cabling systems. They are the link between the central distributor and the workplace outlets. R&M provides an extensive product range, featuring Cat. 5e and Cat. 6 CP flex cables, shielded and unshielded.

#### Flexible CP cables (patch cable version) offer a wide range of advantages such as:

- Easy installation
- Saving of time
- Future orientation
- Flexibility

#### Maximum cable lengths acc. to ISO/IEC 11801

010.3053



CD = Campus distributor  
BD = Building distributor  
FD = Floor distributor  
CP = Consolidation point  
TO = Terminal Outlet

Planning the channel length:

$$(A + B + E + \text{CP-cable}) \cdot 1.5 + \text{fixed cable} < 100 \text{ m}$$

#### Ordering Information

020.2862



Description	Packing Unit	Part Number	
CP Patch Cord, 5e, U/UTP 4P, 7.5 m, PVC	5	R307083	CLASSICsystem
CP Patch Cord, 5e, U/UTP 4P, 10 m, PVC	5	R307084	CLASSICsystem
CP Patch Cord, 5e, U/UTP 4P, 15 m, PVC	5	R307085	CLASSICsystem
CP Patch Cord, 5e, SF/UTP 4P, 7.5 m, LSFROH	5	R307086	CLASSICsystem
CP Patch Cord, 5e, SF/UTP 4P, 10 m, LSFROH	5	R307087	CLASSICsystem
CP Patch Cord, 5e, SF/UTP 4P, 15 m, LSFROH	5	R307088	CLASSICsystem
CP Patch Cord, 6, U/UTP 4P, 7.5 m, LSOH	5	R307089	STARsystem
CP Patch Cord, 6, U/UTP 4P, 10 m, LSOH	5	R307090	STARsystem
CP Patch Cord, 6, U/UTP 4P, 15 m, LSOH	5	R307091	STARsystem
CP Patch Cord, 6, S/FTP 4P, 7.5 m, LSFROH	5	R307092	STARsystem
CP Patch Cord, 6, S/FTP 4P, 10 m, LSFROH	5	R307093	STARsystem
CP Patch Cord, 6, S/FTP 4P, 15 m, LSFROH	5	R307094	STARsystem



Other lengths available on request.

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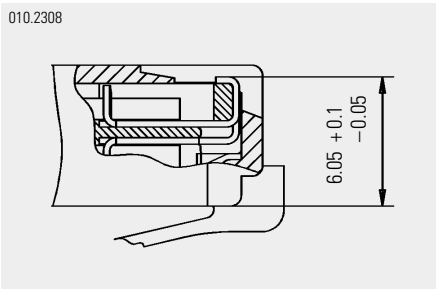


- Standard basis: IEC 60603-7 RJ45
- Categories 5 + 6; CD ISO/IEC 11801: April 2001 IEC 60603-7-1 to 5
- EN 50173: Aug. 2001 (mated connection)
- EIA/TIA 568B:2001

#### Features

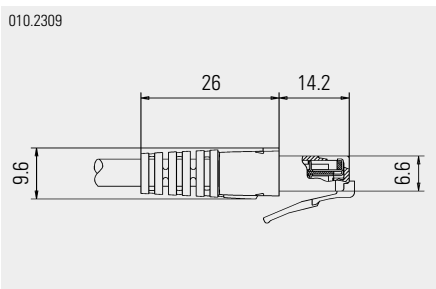
- Guaranteed constant contact height 6.00 mm (fixed contact)
- Contact resistance of insulation displacement contacts is up to 10 times better than penetration contacts (better long-term stability)
- Multiple overstretching of catch possible (up to 10 times)
- Wire/stranded cable can be wired with the same connector
- Wide range of conductor diameters can be wired
- Reproducible and dependable transmission values
- Excellent, round strain relief (e.g. not affecting the data cable's shape)
- Compact design
- Backwards compatible

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The contact height in R&M's connector never varies due to design and assembly.

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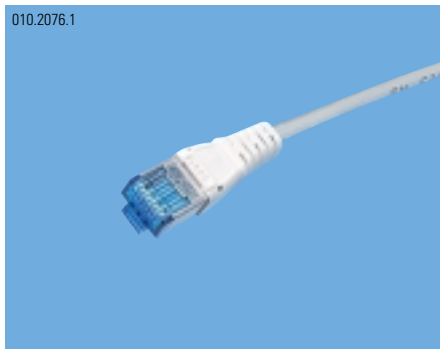


#### Strain relief:

The R&M strain relief fulfils the TIA/EIA-568-B.1-1 requirements.

- Narrow
- Compact
- Designed for alignment
- Coding option
- Labelling window
- Radius limit at 8 mm
- Available without logo
- Colour RAL 9010

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### Cat. 6 Connector Data Sheet

IEC type designation: IEC-60603-7-X C8 MD-E11-1

#### Mechanical Data

Poles	8
Contact material	Bronze (CuSn <sub>6</sub> )
Contact surface	> 1.2 μm gold over 1.2 μm nickel
Connector insulation material	Polycarbonate (UL-94-V0)
Min. mating cycles	> 1000
Connection technique	Insulation displacement method, acc. to 60352-4
IDC surface treatment	Tin-plated, approx. 5 μm

#### Technical Data

Admissible wire Ø	0.4 mm (AWG26/1 – 0.5 mm (AWG24/1)
Admissible strand wire Ø	(AWG28/7) – (AWG24/7) (0.09 – 0.22 mm <sup>2</sup> )
Admissible insulation Ø	1.25 mm max.
U/UTP cable jacket Ø	4.5 mm – 6.5 mm
S/UTP cable jacket Ø	4.5 mm – 6.2 mm
S/FTP cable jacket Ø	4.5 mm – 6.2 mm
Wire strain relief	Through plastic ribs
Cable strain relief	Through crimping > 200 N (cable geometry round crimping)
Shield bonding	Large surface crimping 360° (on cable)
Shield material	Brass (CuZn), hot-dip tinned 3 μm
Wiring	In pairs (no splitting)
Tin-coating	Unleaded
Suitable for ribbon cables	No
Suitable for round cables	Yes

#### Electrical Data

Contact resistance (wire – IDC)	< 1 mΩ
Contact resistance (strand – IDC)	< 5 mΩ
Connector contact	< 10 mΩ with R&M C6 socket
Connector shield	< 20 mΩ
Insulation resistance (100 V)	> 500 MΩ
Dielectric strength (contact – contact)	> 1000 V, 1min.
Dielectric strength (shield – contact)	> 1500 V, 1 min.
Nominal current	1.75 A 20 °C

#### Application and Certification

Mechanical, electrical and transmission characteristics (measured at 20°).



With the colour coding clips, available in 8 colours, you can mark and identify your patch cords in correspondence to the pin assignment or the corresponding network service. The colour coding is easily snapped onto the strain relief sleeves, and just as easily exchanged in case of changes.




**Features**

- Simple, large and clearly visible identification of the corresponding network service
- Exchangeable and re-usable colour coding
- Designated field for labelling or logo
- Halogen-free material

**Ordering Information**



Description	Packing Unit	Part Number
Colour Coding, anthracite	20	<b>R302342</b>
Colour Coding, blue	20	<b>R302343</b>
Colour Coding, brown	20	<b>R302344</b>
Colour Coding, yellow	20	<b>R302345</b>
Colour Coding, grey	20	<b>R302347</b>
Colour Coding, green	20	<b>R302348</b>
Colour Coding, red	20	<b>R302349</b>
Colour Coding, violet	20	<b>R302420</b>

Matching Accessories				
Safe Clip	RJ45 Keying System "Data Safe Lock"	Splash Protective Line		
010.1910.1	010.0962.2	010.2128.1		
				
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## FO Patch Cords

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FO patch cords are used to interconnect active network components or do the connections on the patch panel.

### Features

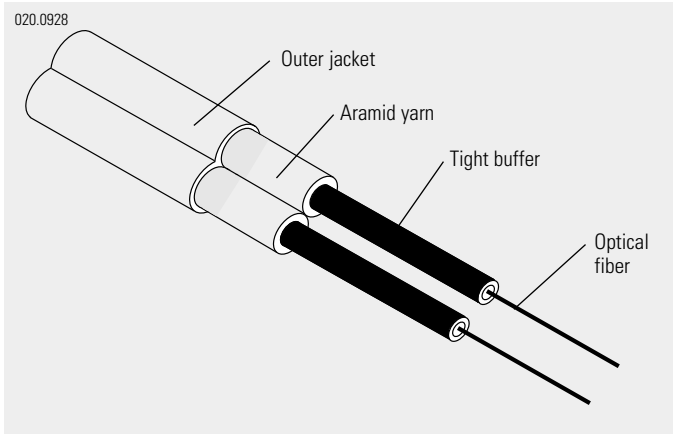
- Available in wide range of lengths
  - Duplex patch cord
  - LSZH cable jacket
  - Various connector types and hybrid cables available
  - Fiber quality OM1 (62.5/125) and OM2 (50/125); OM3 (50/125) on request
  - Performance according ISO/IEC 11801 and EN50173
- Insertion loss < 0.5 dB for 95%  
< 0.75 dB for 100%
- Return loss < 20 dB

### Technical data of the single fiber cable

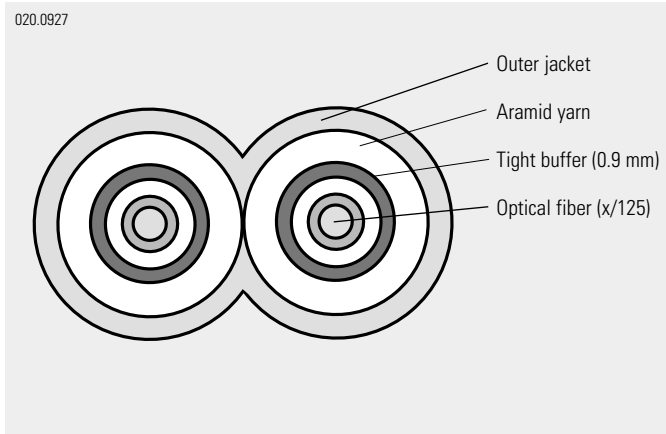
		Single fiber connector	MT-RJ and LC connector
Number of fibers	-	2	2
Weight [kg/km]	-	20	7
Diameter (D) of the cable [mm]	-	2.8 x 5.7	1.6 x 3.5
Max. tensile strength, during installation [N]	-	600	150
Min. bending radius, during installation [mm]	-	30 mm	50 mm
Min. bending radius, when installed [mm]	-	60 mm	30 mm
Fire test	IEC 60332-3	✓	✓
Temperature range [°C], when installed	-	- 5 to + 70	- 5 to + 70
Temperature range [°C], during storage	-	- 25 to + 70	- 20 to + 70


### FO Duplex Patch Cord

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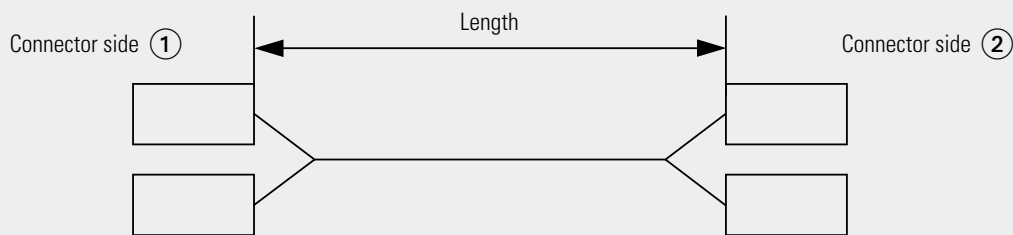


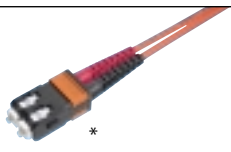
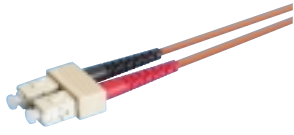
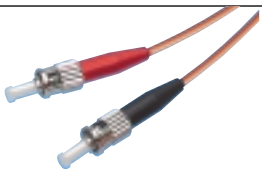
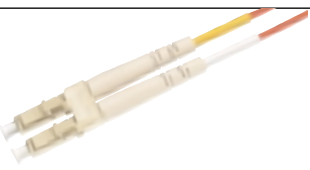
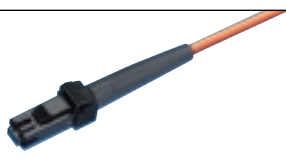
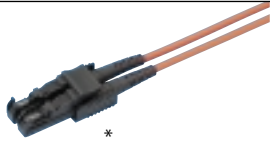
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 Security System for SC-RJ see page 172.

030.1371



Connector side ① \ Connector side ②		090.2056			010.2142		
		<b>SC-RJ</b> 62.5/125 (OM1)	50/125 (OM2)	50/125 (OM3)	<b>E-2000™ Compact</b> 62.5/125 (OM1)	50/125 (OM2)	50/125 (OM3)
 <b>SC-RJ</b>	1 m	R30581	<b>R300116</b>	R310819	R304041	<b>R304036</b>	R311789
	2 m	R30582	<b>R300117</b>	R310820	R304042	<b>R304037</b>	R311786
	3 m	R30583	<b>R300118</b>	R310821	R304043	<b>R304038</b>	R311785
	5 m	R30585	<b>R300120</b>	R310822	R304045	<b>R304040</b>	R311799
 <b>SC Duplex</b>	1 m	R300126	<b>R300121</b>	R311794	R304031	<b>R304026</b>	R311783
	2 m	R300127	<b>R300122</b>	R311790	R304032	<b>R304027</b>	R311787
	3 m	R300128	<b>R300123</b>	R311791	R304033	<b>R304028</b>	R311784
	5 m	R300130	<b>R300125</b>	R311792	R304035	<b>R304030</b>	R311788
 <b>ST</b>	1 m	R30591	<b>R300131</b>	R311793	R304017	<b>R304012</b>	R311798
	2 m	R30592	<b>R300132</b>	R311801	R304018	<b>R304013</b>	R311797
	3 m	R30593	<b>R300133</b>	R311800	R304019	<b>R304014</b>	R311796
	5 m	R30595	<b>R300135</b>	R311802	R304021	<b>R304016</b>	R311795
 <b>LC</b>	1 m	R310293	R310289	R310285	n.a.	R310291	R310287
	2 m	R308932	R308944	R308956	R308929	R308941	R308953
	3 m	R308933	R308945	R308957	R308930	R308942	R308954
	5 m	R308934	R308946	R308958	R308931	R308943	R308955
 <b>MT-RJ</b>	1 m	R302248	R302243		R304051	R304046	
	2 m	R302249	R302244		R304052	R304047	
	3 m	R302250	R302245		R304053	R304048	
	5 m	R302252	R302247		R304055	R304050	
 <b>E-2000™ Compact</b>	1 m		* Color coding 62.5/125 μm (OM1) = black 50/125 μm (OM2) = orange 50/125 μm (OM3) = turquis		R304061	<b>R304056</b>	R307531
	2 m			R304062	<b>R304057</b>	R307532	
	3 m			R304063	<b>R304058</b>	R307533	
	5 m			R304065	<b>R304060</b>	R307534	

**i** For patch cords mounted with connectors or other combinations, see catalogue R306470.

