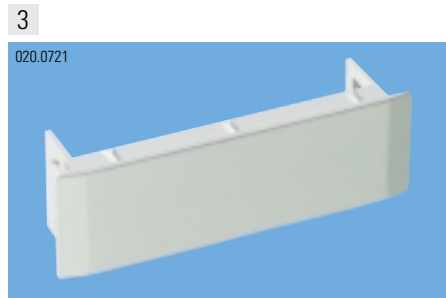
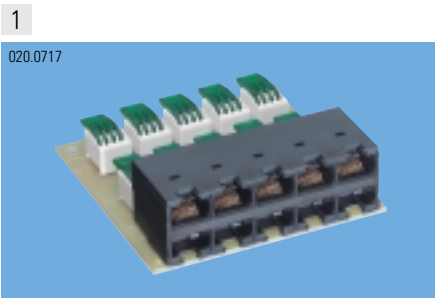


getmore 010.2936

Intelligent voice integration

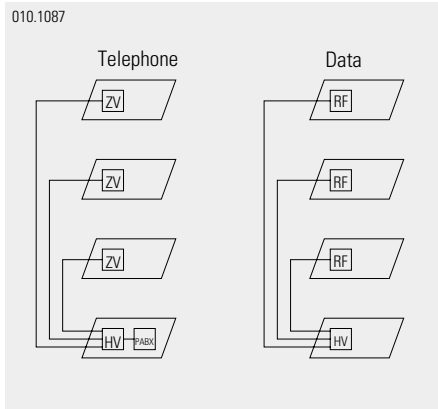
- Highest packing density
- Modular design
- Efficient and tool-free connection technique
- Comprehensive product range
- Ingenious labelling system
- PBX plug & play solutions

@ **R&M**



Products	Page
1 19" RJ45 Voice Panel	85
2 PBX Connection Modules	87
3 19" RJ45 Voice Panel Accessories	91
4 VS Modular 19" Insertions	92
5 ISDN	94
6 Telephony Adapters	98

Voice Integration Introduction



Functional schematic diagram of voice and data networks in a building.

The separate worlds of voice and data transmission are increasingly merging into one. Modern private automated branch exchanges (PABX), for example, not only have ISDN capability on the exchange side but also internally which allows computers with ISDN boards to operate as PABX extensions. In the future in-house telephone networks will thus turn into multi-functional systems transmitting voice, data and video signals. Their drawback is that they are not cut out for the transmission of large quantities of data at high bit rates. This task is for the data networks to carry out, and in the future these two networks will continue to exist side-by-side.

The telephone cabling system in a building shows the star-shaped configuration of multi-conductor branch cables running from the main distributor (MD) to the intermediate distributors. Here these intermediate distributors meet the data patch panels and they are all mounted into the floor distributor (FD) cabinets.

The floor distributors as well as the patch panels function as interfaces between the horizontal voice and data cabling within the floors. At this transition point there are many possibilities for bringing the two separate cabling systems together in a common, application-independent cabling system.

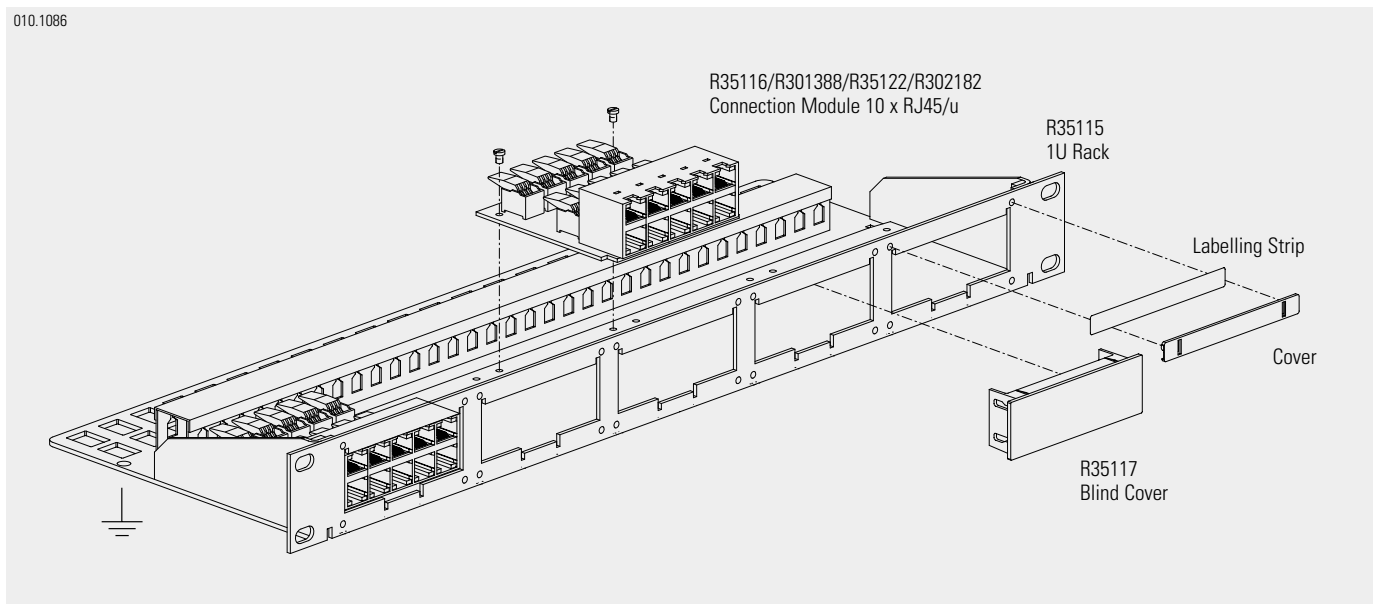
In the following pages we will present you with two different easy and economical implementation options of voice integration between your secondary telephone cabling and tertiary communication cabling.

This voice panel for your flexible and efficient telephone cabling is a compact and neat interface for telephone lines. Due to the 19" technology it can be smoothly integrated into the generic cabling system. This voice panel allows the connection of up to 100 single-pair communication services for analogue as well as digital systems. Its modular design and unique labelling system ensure a neat and easy integration of the voice panel into a generic cabling system.

Features

- 19" 1U voice panel with modular design and up to 50 RJ45/u ports
- Category 3 performance in conformance with EIA/TIA 568A, EN 50173 and ISO/IEC 11801
- Tool-free Easy Lock IDC connection technique for installation cables with conductor diameters 0.25 mm – 0.65 mm (AWG30-22). Strands = AWG 26/7 – 24/7. Admissible insulation \varnothing 0.7 – 1.6
- Labelling holders with exchangeable labelling strips
- Duct for optimum cable management
- Prepared for earth connection
- Suitable for multipair cables

010.1086

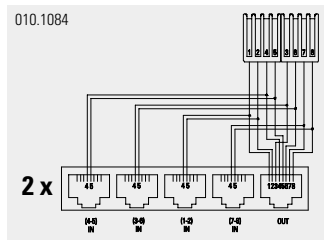


Technical Data Connection Module 10 x RJ45/u (R35116)

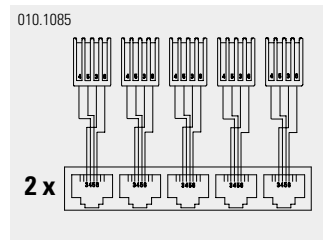
Operational temperature range	- 10 °C to + 55 °C
NEXT	> 34 dB/16 MHz
Attenuation	< 0.1 dB/16 MHz
Dielectric strength	> 1000 V AC _{eff}
Insulating resistance	> 500 M Ω

Voice Integration 19" RJ45 Voice Panel

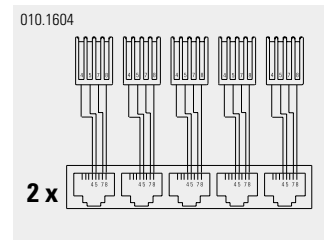
Wiring diagram 1



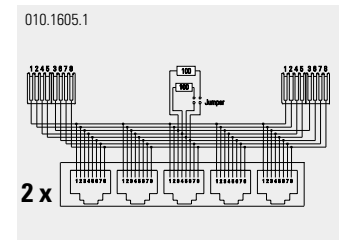
Wiring diagram 2



Wiring diagram 3



Wiring diagram 4

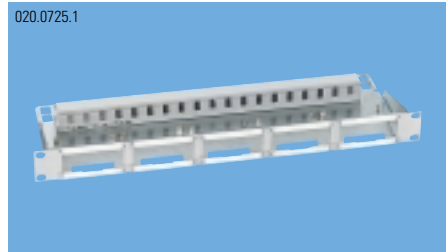
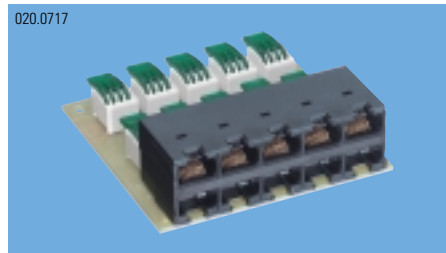
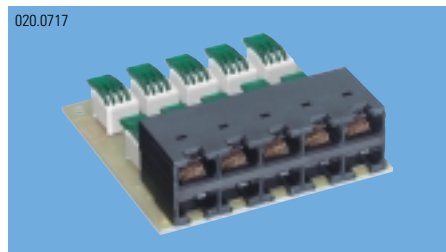
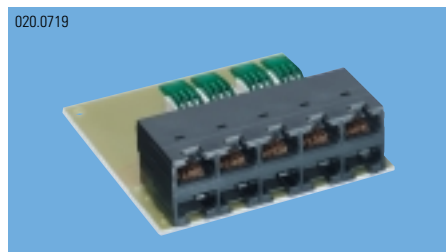
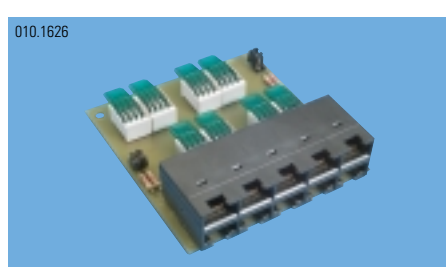


Ordering Information

Description

Packing Unit

Part Number

	<p>19" 1U Rack, empty</p> <p>Accommodates up to five connection modules 10 x RJ45/u. Includes mounting and labelling kit. Overall dimensions: 1U, 84HP Finish: grey, powder-coated</p>	1	R35115
	<p>Connection Module 10x RJ45/u (4–5, 3–6)</p> <p>Category 3 connection module with 10 unshielded RJ45 ports. Tool-free Easy Lock connection technique.</p>	2	R35116
	<p>Connection Module 10x RJ45/u (4–5, 7–8)</p> <p>Category 3 connection module with 10 unshielded RJ45 ports. Tool-free Easy Lock connection technique.</p>	3	R301388
	<p>Concentrator Module 8 x RJ45/u to 2 x RJ45/u</p> <p>Can concentrate up to four 2-conductor terminal devices to a RJ45 jack. Together with the telephony adapter (R35121) it uses all eight conductors in a generic cabling system.</p>	1	R35122
	<p>Connection Module 10x RJ45/u ISDN/Bus</p> <p>One of these modules can connect up to 2 ISDN basic accesses, supplying up to 10 users with ISDN services at their workstations. Special ISDN outlets or termination adapters are no longer required. The required S-Bus termination (2 x 100 Ω) is integrated and activated with jumpers.</p>	4	R302182

i Global Voice Adapter R310400 see page 59.

Innovative cabling concept for LAN-based PBXs

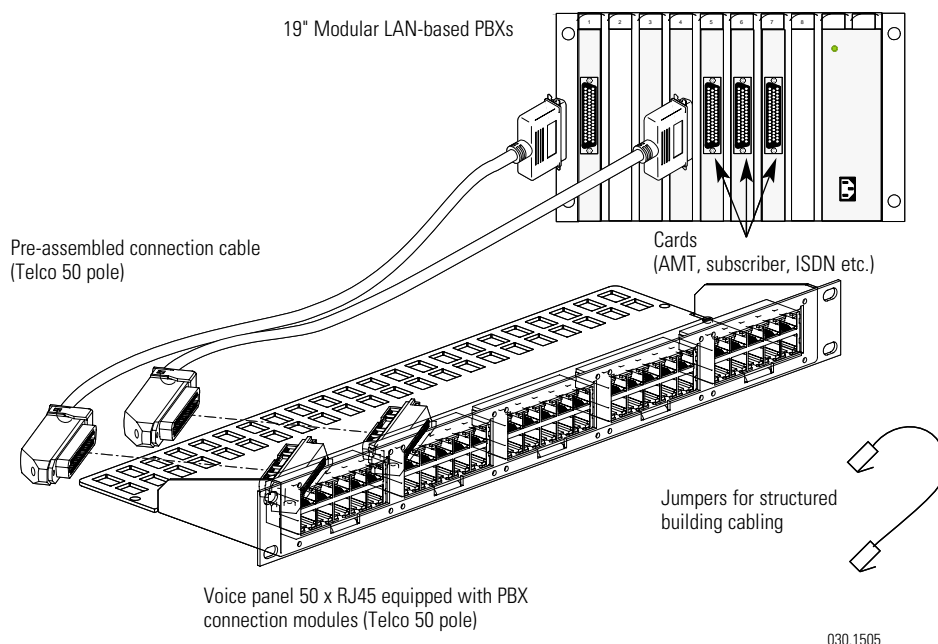
Increasingly, PBX equipment is also offered in 19" technology, with interfaces to integrate LANs. These interfaces establish intelligent connections between PCs and telephones in a technology that is also known as CTI (Computer Telephony Integration). CTI combines the power of a PC with that of the telephone system, allowing the control of all telephone functions via computer. Telephone numbers are dialled directly from the computer or with incoming calls customer data is automatically brought in from a database. This connection also allows the direct processing of e-mails, voice mails, or faxes, from the PC. A modern PBX with CTI can provide significantly improved and more effective communication.

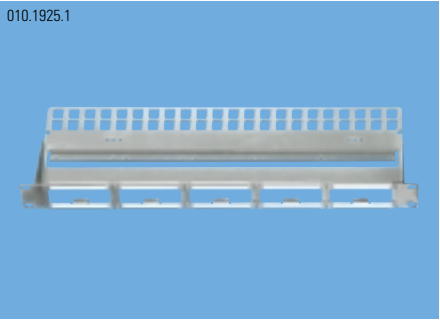
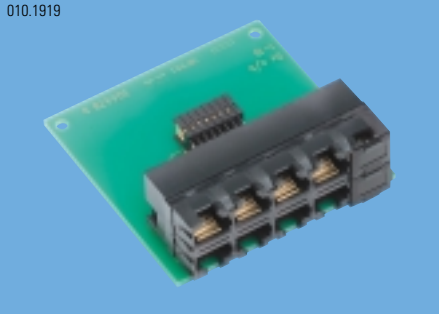


Optimal integration of the PBX into the structured cabling system

19" technology ensures optimum integration of the PBX into the structured cabling system. To integrate a LAN there usually is a respective LAN switch nearby. Passive tertiary cabling too, is run from the same cabinet. The main board or insertion cards of most PBXs feature respective connection modules, for example Telco 50 pole. R&M now offers the respective counterpart on the cabling side. Based on the successful voice panel, with up to 50 x RJ45 on 1U, the R&M range now also includes connection modules suitable for various PBXs. This allows the fast taking on of a PBX with pre-assembled cables (plug and play), dispensing with any cabling work.

Features

- Fast and simple commissioning of the PBX
- No need for intermediate distributor/main distributor
- No more expensive cabling work
- Optimum integration of the PBX in the structured cabling system
- Cost savings of up to 50% and more when compared to conventional solutions

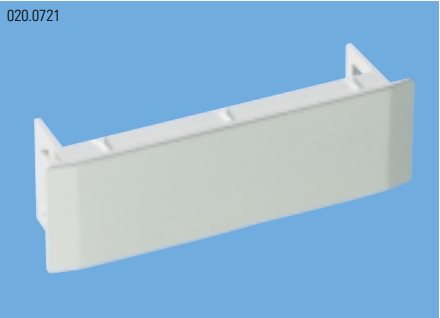
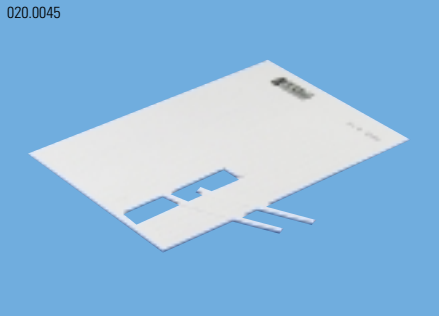



Ordering Information	Description	Packing Unit	Part Number
 <p>010.1925.1</p>	<p>19" 1U Rack, empty for PBX Accommodates five connection modules 8/10 x RJ45. Includes fastening material and labelling kit. Overall dimensions: 1U, 84HP Finish: grey, powder-coated Without wiring channel</p>	1	R305123
 <p>010.1919</p>	<p>Connection Module 8 x RJ45/u With Modu connection. For 2-wire applications. Pin assignment RJ45 4-5</p>	1	R304742
 <p>010.1918</p>	<p>Connection Module 8 x RJ45/u With two Modu connections. For ISDN base access (T interface). Pin assignment RJ45 4-5/3-6</p> <p>Connection Module, 8 x RJ45/u, switch-selectable With two Modu connections. For ISDN connection S or T interface. Accessible via jumper for each individual RJ45 port.</p>	1	R304743
 <p>010.1923</p>	<p>Special AMP Modu II Connecting Cable With two 16-pole plugs.</p> <p>Length = 2 m 4 m 6 m</p>	1 1 1	R304950 R306105 R306104

Ordering Information	Description	Packing Unit	Part Number
<p>010.1925.1</p> 	<p>19" 1U Rack, empty for PBX Accommodates five connection modules 8/10 x RJ45. Includes fastening material and labelling kit. Overall dimensions: 1U, 84HP Finish: grey, powder-coated Without wiring channel</p>	1	R305123
<p>010.1920</p> 	<p>Connection Module 9 x RJ45/u MDECT Pin assignment RJ45 4-5/3-6</p>	1	R304670
<p>010.1921</p> 	<p>Connection Module 8 x RJ45/u SILC/ISDN BRA 4 x T/4 x S. Pin assignment RJ45 4-5/3-6</p>	1	R304667
<p>010.1916</p> 	<p>Connection Module 16 x RJ45/u XFALC/XDLC/XFEM Pin assignment RJ45 4-5</p>	1	R304668
<p>010.1924</p> 	<p>Connection Module 48 x RJ45/u XDLC Pin assignment RJ45 4-5</p>	1	R304669

i Connecting cable PBX-RJ45 connection module can be obtained from the PBX manufacturer.

Voice Integration
19" RJ45 Voice Panel, Accessories

Ordering Information	Description	Packing Unit	Part Number
<p>020.0721</p> 	<p>Blind Cover Covers one empty rack space in a voice panel. Colour: light grey</p>	1	R35117
<p>020.0045</p> 	<p>Labelling Sheet Perforated labelling strips without logo (unlettered) to label the voice panel and Global Voice Adapter. Contains 72 labelling strips. Suitable for laser printer.</p>	1	R35119
<p>020.0724</p> 	<p>Mounting Support Enable user-friendly installation of the voice panel directly to the 19" cabinet.</p>	1	R35118

i Global Voice Adapter R310400 see page 59.
 A free MS Word template for fast and professional patch panel labelling is available on our website (www.rdm.com).



19" rack insertions with VS Modular components are ideal for the termination of secondary cabling of floor distributors.

Features

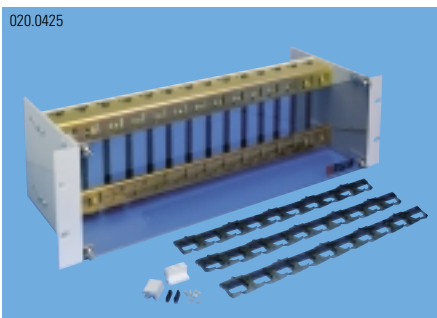
- Cable entry at the rear
- Transparent front panel
- Integral tension relief
- High connection density

Ordering Information

Description

Packing Unit

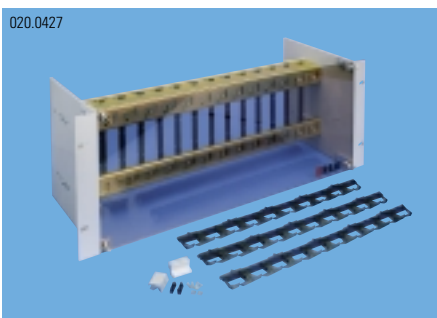
Part Number



19" 3U Rack Insertion, VS Modular, Type S
 Mounting rail for 14 10 pairs connection modules.
 Including transparent cover and mounting material.
 The 19" fixing kit needs to be ordered separately.
 Rack depth: 167 mm

1

R24122-3



19" 4U Rack Insertion, VS Modular, Type S
 Mounting rail for 14 12 pairs connection modules.
 Including transparent cover and mounting material.
 The 19" fixing kit needs to be ordered separately.
 Rack depth: 167 mm

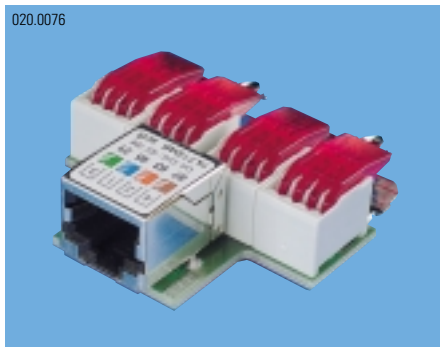
1

R24122-4

i For VS Modular connection modules please refer to catalogue R21902.
 19" = 482.60 mm
 1U = 44.45 mm

ISDN RJ45 Connection Modules

020.0076



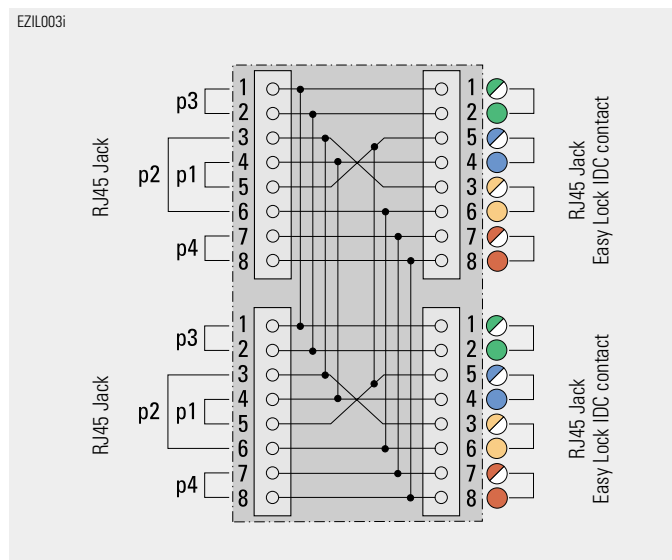
The RJ45 ISDN connection modules are the central part of an ISDN cabling. They are fitted with shielded or unshielded RJ45 ports and allow tool-free and time-saving connection of S/FTP, SF/UTP, F/UTP and U/UTP installation cables.

Features

- Tool-free Easy Lock connection technique (IDC) for data cables with AWG 24-22 wire diameter
- Error-free connection thanks to labelled wiring
- Connection without pair crossover
- Simple and time-saving shield contacting¹ (also for cables without drain wire)

Pin assignment

EZIL003i



Mechanical Data

Number of RJ45 jacks	1 and 2
Contact material	CuSn
Contact surface	1.27 µm gold over 3 µm nickel
Insulation material	Polyester, fiber-glass reinforced (UL-94-V0)
Mating cycles, min.	1000 ISO/IEC 11801
Number of IDCs	4 (with 1 and 2 jacks)
Contact material	CuSn, silver-plated, 4-8 µm passivated
Insulation material	Polycarbonate (UL 94V-0)
Admissible wire Ø	0.5 mm (AWG 24) – 0.65 mm (AWG 22)
Admissible insulation Ø	0.8 – 1.5 mm
Mating cycles IDC, min.	100
Wire strain relief	Through plastic ribs
Cable strain relief	Through cable ties
Shield contacting 11	Large surface contact springs (on plug)
Shield contacting 21	Shield lance (on cable) 4.8 x 0.5 mm



IDC = Insulation Displacement Contact (IDC termination technology)

AWG 22 = 0.643 mm

AWG 23 = 0.574 mm

AWG 24 = 0.511 mm

¹ Applies to shielded version only.

Ordering Information	Description	Packing Unit	Part Number
<p>020.0076</p> 	<p>Connection Module ISDN 1 x RJ45/s ISDN connection module with one shielded 8-pin Bus RJ45 port. Tool-free Easy Lock connection technique for data cables with wire diameter AWG 24-22. Integral cable strain relief. Includes dust cover, two cable ties and installation instructions.</p>	10	R25372
<p>020.0077</p> 	<p>Connection Module, 1 x RJ45/u, ISDN-Bus ISDN connection module with one unshielded 8-pin Bus RJ45 port. Tool-free Easy Lock connection technique for data cables with wire diameter AWG 24-22. Integral cable strain relief. Includes dust cover, two cable ties and installation instructions.</p>	10	R25373
<p>010.1677</p> 	<p>Connection Module ISDN 2 x RJ45/s ISDN connection module with two shielded 8-pin Bus RJ45 ports. Tool-free Easy Lock connection technique for data cables with wire diameter AWG 24-22. Integral cable strain relief. Includes two dust covers, two cable ties and installation instructions. (Module holder 2 port included.)</p>	10	R25431
<p>010.1678</p> 	<p>Connection Module, 2 x RJ45/u, ISDN-Bus ISDN connection module with two unshielded 8-pin Bus RJ45 ports. Tool-free Easy Lock connection technique for data cables with wire diameter AWG 24-22. Integral cable strain relief. Includes two dust covers, two cable ties and installation instructions. (Module holder 2 port included.)</p>	10	R25434
<p>020.0075</p> 	<p>ISDN-T Resistor set of 2 Two resistors to subsequently mount onto the Easy Lock terminals of the ISDN outlets.</p>	1	R25111

**ISDN
Mini-S-Bus**



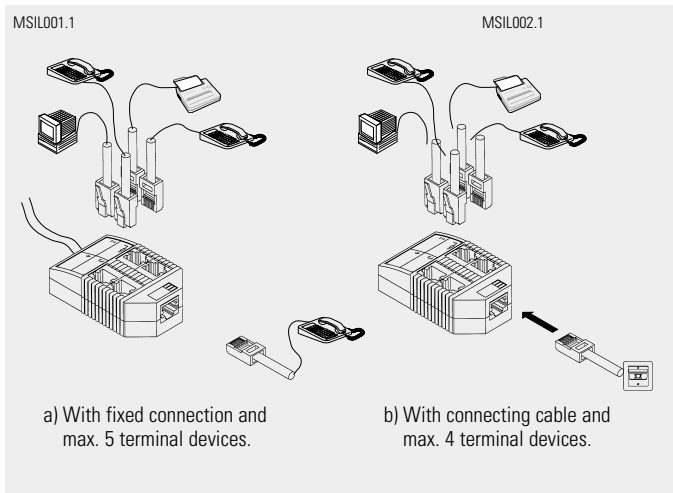
The RJ45 ISDN Mini-S-Bus replaces or extends S-Bus cabling. It allows fast and economical connection of up to five ISDN terminal devices.

Features

- 4 or 5 terminal devices can be connected
- Attractive design in white or anthracite
- Shielded and unshielded version
- Large labelling area
- Integrated 100 Ohm termination resistors (can be disabled with jumpers)
- Simple connection via plug or cable
- Small dimensions

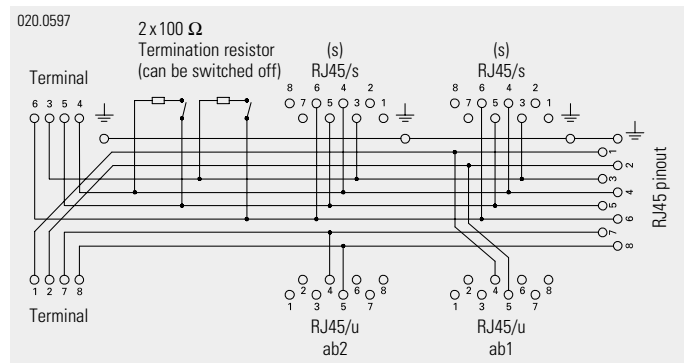
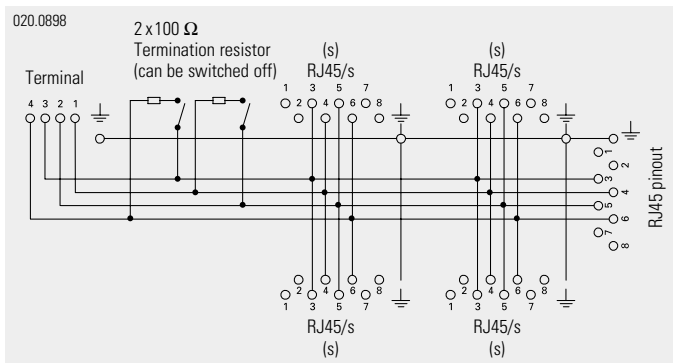
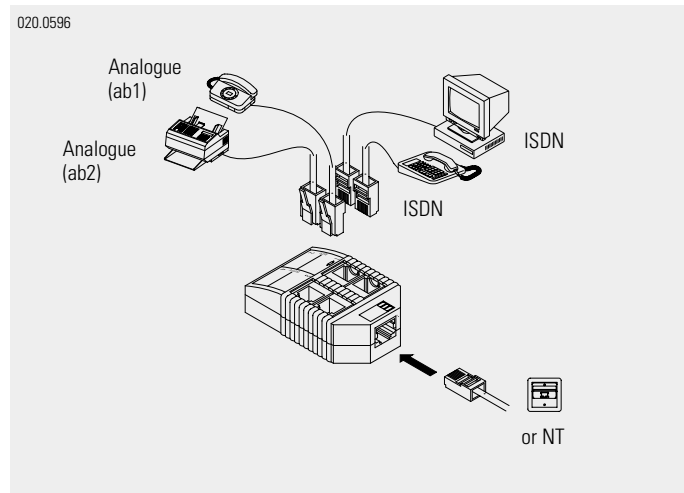
ISDN Mini-S-Bus digital

Connection options/technical data

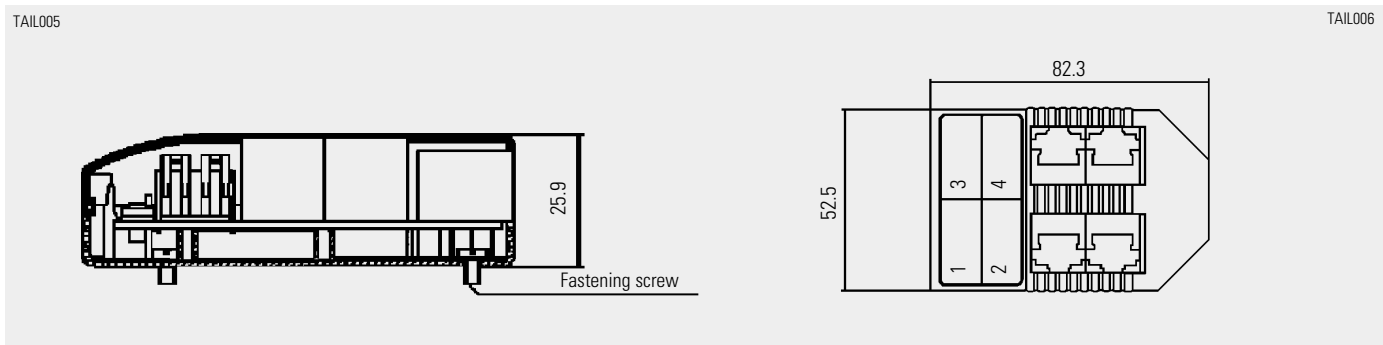


ISDN Mini-S-Bus analogue/digital

Connection options/technical data



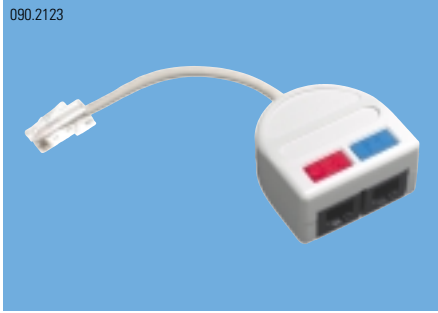
Dimensions



Ordering Information	Description	Packing Unit	Part Number
<p>MSP1002</p> 	<p>ISDN Mini-S-Bus digital, shielded, anthracite For connecting up to five ISDN terminal devices. Replaces or extends S-Bus cabling.</p>	1	R25520
	<p>ISDN Mini-S-Bus digital, shielded, white</p>	1	R25521
	<p>ISDN Mini-S-Bus digital, unshielded, anthracite</p>	1	R25522
	<p>ISDN Mini-S-Bus digital, unshielded, white</p>	1	R25523
<p>020.0599</p> 	<p>ISDN Mini-S-Bus analogue/digital, white With 2 analogue and 2 digital RJ45 connections.</p>	1	R25987
	<p>ISDN Mini-S-Bus analogue/digital, anthracite</p>	1	R25988

Telephony Adapters

090.2123

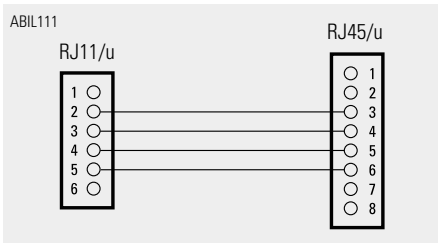


The telephony adapters are used for connecting telephone sets with RJ11 interfaces to cabling systems with RJ45 interface.

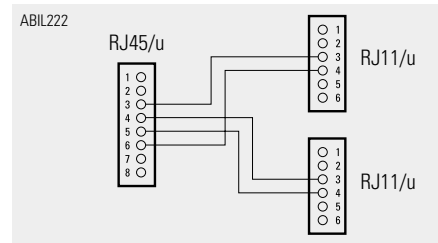
Features

- Connector matching: RJ45 to RJ11
- Unshielded version

Telephone cord RJ11/u to RJ45/u **1**

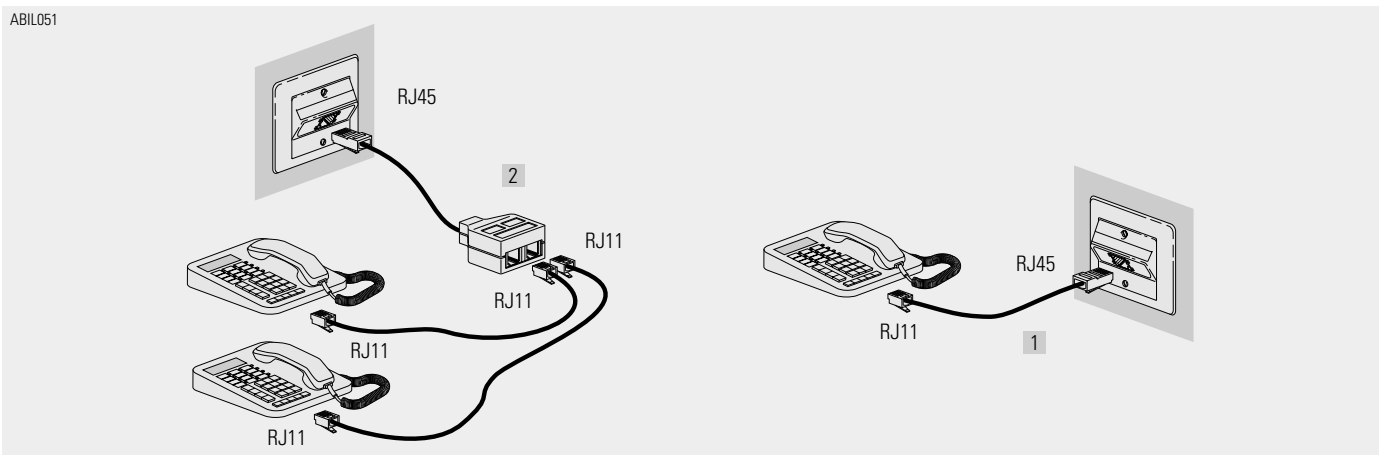


Splitter RJ45/u to 2 x RJ11/u **2**



Anwendung

ABIL051



Ordering Information

Description

Packing Unit

Part Number

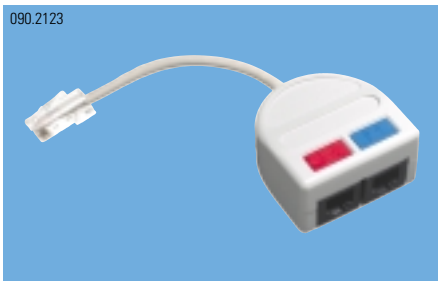
020.0964



Telephone Cord U/UTP, RJ45/u to RJ11/u, 3 m **1** 10 R925693
RJ45 pin assignment: 4–5/3–6

Telephone Cord U/UTP, RJ45/u to RJ11/u, 5 m **1** 10 R925692
RJ45 pin assignment: 4–5/3–6

090.2123



Splitter RJ45/u to 2 x RJ11/u **2** 10 R925721
For integrating RJ11 into FTP, S-FTP, and UTP cabling systems with RJ45 interface.
RJ45 pinout: 4–5/3–6



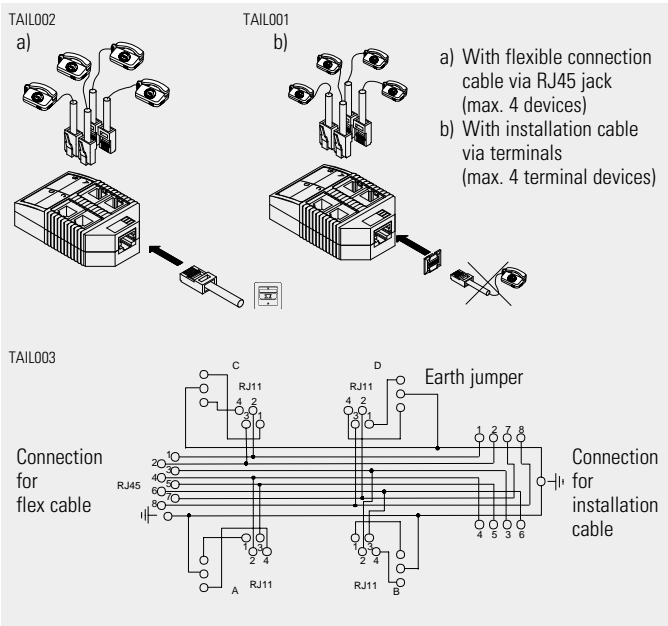
Generally, the horizontal cable in a generic cabling system the horizontal cable (connections between floor distributors and telecommunication outlets) features 8 conductors that are terminated to an RJ45 outlet. However, many terminals such as telephone and fax use only two conductors, meaning that six conductors in the horizontal cable remain unused.

With the R&M distributors 1 x RJ45 – 4 x RJ11/4 x RJ45 up to four 2-conductor terminal devices can be connected to an RJ45 jack. One conductor pair each of the RJ45 outlet or terminal block is led to the RJ11/RJ45 jack to which the terminal equipment is then connected. Full use is made of all the conductors in the horizontal cable.

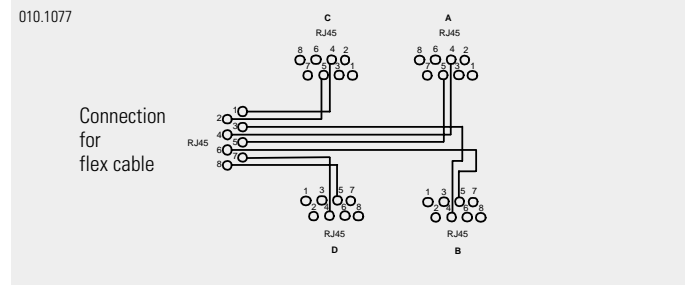
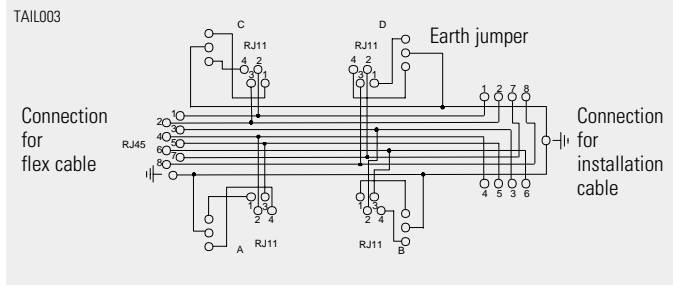
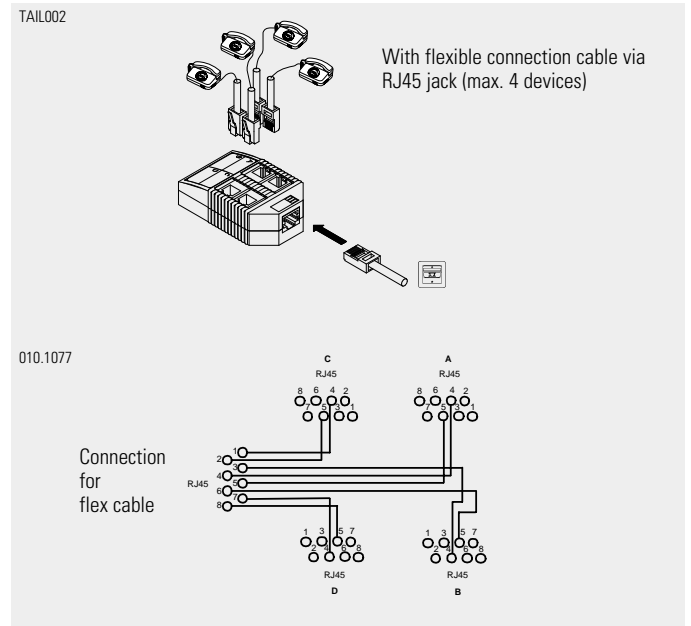
Features

- 4 terminal devices can be connected to one RJ45 outlet
- Full use of all the conductors of the connection cable
- Connectible via terminals or jacks (R25524 only)
- Earth connection of the outputs selectable by means of jumpers (R25524 only)
- Large labelling area
- Attractive design
- Small dimensions

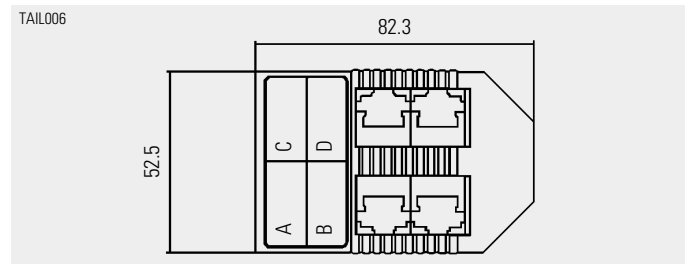
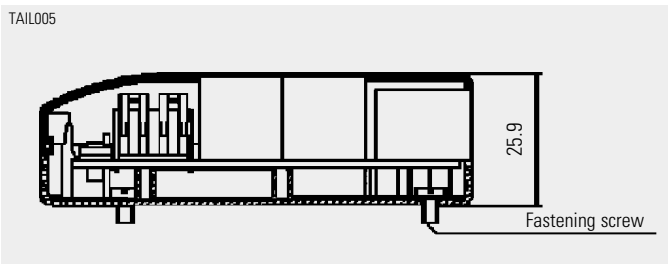
Type: Distributor 1 x RJ45 – 4 x RJ11



Type: Distributor 1 x RJ45 – 4 x RJ45



Dimensions, both types



Ordering Information

Description

Packing Unit

Part Number

TAPI001



Distributor 1 x RJ45 to 4 x RJ11/u

To integrate RJ11 into F/UTP, SF/UTP, and U/UTP cabling systems featuring RJ45 interfaces.
Colour: pearl white

1

R25524

020.0720



Distributor 1 x RJ45/u to 4 x RJ45/u

Combined with the matching concentrator module (R35122, page 86) it uses all 8 conductors in a generic cabling system.
Colour: anthracite
C-UL-US certified

1

R35121

i Selectable Earth Connection

Telephones in older installations still require an earthing control key, i.e. a third wire at the RJ11 jack. Depending on the telephone system this wire possibly runs on a different pin. It can be wired to either pin 1 or 4 of the RJ11 jack in the R&M distributor 1 x RJ45 – 4 x RJ11 by means of jumpers. On the input side the shielding of the horizontal cable serves as earth conductor. It is connected to the shielding of the RJ45 jack, or wired with a terminal clip (1 x RJ45/4 x RJ11 distributors only).