R&M*freenet* Cat.6A Connection Module

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The R&M*freenet* Cat.6A connection modules, part of the Freenet cabling system, are ideal for voice, fast data transmissions and high bandwidth applications. This high performance Cat.6A module is perfect for use in 10 Gigabit Ethernet (10GBASE-T) and future high-speed applications up to 500MHz and beyond. The shielded version fulfills 25G transmission speeds (25GBASE-T) when used with the respective R&M Cat. 7A installation cables.

Features of Cat.6A Modules

- Exceeds the Cat.6A ISO component specification (for the entire re-embedded plug range) as specified by the standards ISO/IEC 11801, EN 50173, TIA 568.2-D, IEC 60603-7-41/51 and 60603-7
- Exceeding the IEEE 802.3an minimum requirements for 10GBASE-T performance
- **Shielded** version ready for **25G** channel transmission according to ISO/IEC TR11801-9905 up to 30m
- Achieves best in class transmission characteristics for Class EA with R&Mfreenet Cat.6A patch cables
- X-Seperator isolates pairs from each other, minimizing influence of cable termination on transmission performance
- Automatic cutting of wires during termination for precise, consistent impedance control
- Use of all four sides of modules maximizes distance between pairs for optimum performance
- Gold-plated contact area and tin-plated insulation displacement contact area
- Capacitive and inductive compensation
- Compatible with Cat.6A standard patch cords and cables
- Full mechanical and electrical backward compatibility with Cat 5e/6
- RJ-11 compatible
- Fits into 3rd party outlets and patchpanel with 4 different adapters
- Tool-free (w/o special tools) connection of installation cables of AWG 22-26 and stranded cables of AWG 22/7 – 26/7
- Reterminations possible up to 20 times
- Wiring option according to TIA 568 A and B with parallel termination of the pairs without splitting of pair 3,6
- Label with color wiring chart, integrated production date and batch number for quality tracking
- Halogen-free materials, ROHS II
- Supports PoE (IEEE 802.3af), PoEP (IEEE 802.3at), 4PpoE (IEEE 802.3bt) and is compatible to IEC 60512-99-001/002
- 3P and UL certified
- Shielded version GHMT certified
- iF Award winning design

Standards

IEC 60603-7-41/51
ISO/IEC 11801
EN 50173-1

This document was prepared with the greatest possible care and reflects the current state of technology at the time of printing. Subject to corrections and technical changes.

Technical Data

Criteria	Date / value
Operating temperature range	-10°C to +60°C
Storage temperature range	-40°C to +70°C
Humidity	95% (non-condensing)
Contact material	CuSn
Contact surface	1.2 µm gold over nickel
Housing material	Polycarbonate (UL-94-V0), unshielded / CuSn tin-plated, shielded
Number of IDC connections	8 / jack
IDC contact material	CuSn, tin-plated
Cutting blade material	Stainless steel
Admissible wire Ø	0.4 mm (AWG26) – 0.65 mm (AWG22)
Admissible strand Ø	AWG26/7 – AWG22/7
Admissible insulation Ø	0.8 mm – 1.6 mm
Admissible cable Ø	4.5 mm – 9.0 mm
Cable strain relief	Through cable tie
Shield contact to plug	Through contact springs (on jack)
Shield contact to installation cable	Low impedance contact via bayonet
Earth contact	1 contact finger for flat socket 4.8 x 0.5 mm
Shield material	CuSn, tin-plated

IDC Insulation Displacment Contact

Description	Standard value	Relevant Standard	Typical value (at 20°C)
Mating cycles min.	> 750	ISO/IEC 11801	> 1000
IEC 60352-3*	≥ 20		

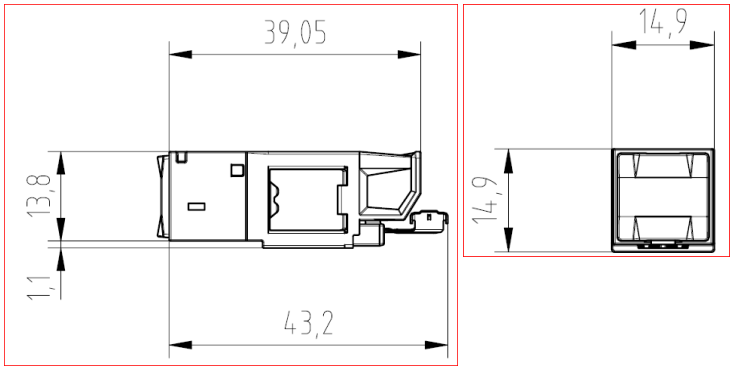
*Re-terminations may be performed with wire of either same or up to two wire gauges smaller wire than originally terminated.

Electrical Data

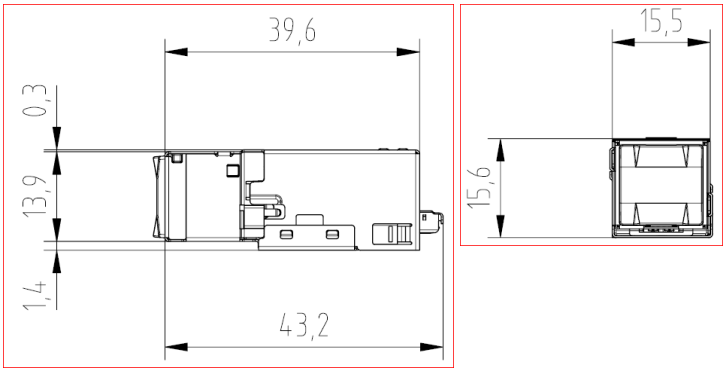
Description	Standard value	Relevant standard	Typical value (at 20°)
Electric strength			
Contacts	1000V DC or AC peak	IEC 60603-7	1200V DC
Contact to shield	1500V DC	IEC 60603-7	1700V DC
Insulation resistance	> 500MΩ (100V DC)	IEC 60603-7	5GΩ (100V DC)
Contact resistance	< 20mΩ	IEC 60603-7	< 5mΩ
I/O resistance	< 200mΩ	IEC 60603-7	60mΩ
I/O resistance unbalance	< 50mΩ	IEC 60603-7	30mΩ
Current carrying capacity	1A @ 60ºC	IEC 60603-7	Pass

Dimensions

Unshielded



Shielded



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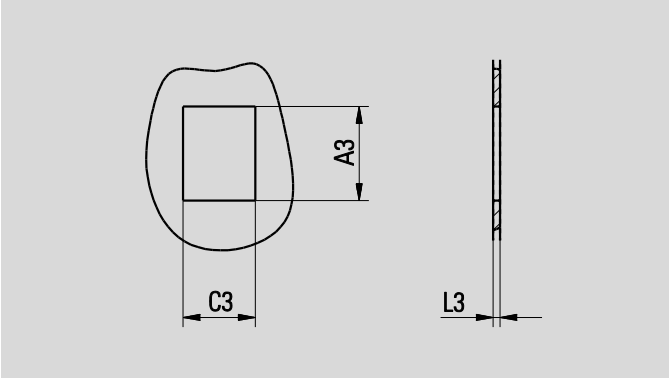
Available Adapters

Freenet	Keystone IEC	Adapter No.1 (UTP only)	Snap-In
	A3/L3: see below, STP/UTP different 		
	Keystone LARGE 20.3mm (UTP only)		
	A3: 20.1 – 20.9mm L3: 1.20 – 1.95mm 		

IEC Keystone cut-out

The keystone adapter ensures that the module will fit in keystone cut-outs as defined in IEC60603-7 ed. 3 Annex D.

Dimensions IEC Keystone



IEC standard values			Adapter capabilities	
Letter	**Maximum (mm)**	**Minimum (mm)**	**STP (mm)**	**UTP (mm)**
A3	19.61	19.30	19.3 - 19.6	19.3 - 19.7
C3	15.04	14.78	n.a.	n.a.
L3	1.54	1.22	1.22 – 1.80	1.20 – 1.95

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