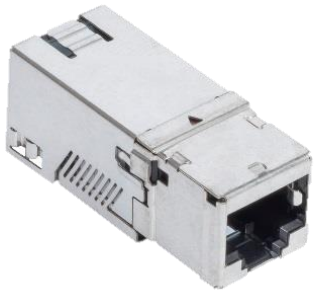
R&M*freenet* Cat.8.1 Connection Module

28.06.2019 / V1.0 / RJK



The R&Mfreenet Cat 8.1 shielded connection modules, part of the freenet cabling system, are ideal for very fast data transmissions and high bandwidth applications. This high-performance Cat 8.1 module is perfect for use in 25/40 Gigabit Ethernet (25GBASE-T / 40GBASE-T) and future high-speed applications up to 2000 MHz.

Features of Cat.8.1 Module

- Attains Cat 8.1 values together with Cat 8.1 patch cables as specified in standard ISO/IEC 11801 and EN50173-1
- When installed as part of an R&M Cat 8.1 shielded channel or permanent link, it meets the IEEE 802.3bq requirements for 40GBASE-T performance, as well as the requirements for Class I performance according to ISO/IEC 11801 and Cat 8.1 performance according to TIA/EIA 568.2-D.
- Supports extended reach of 25G transmission according to ISO/IEC TR11801-9909
- Very good margins on class EA permanent link limits
- Supports PoE (IEEE 802.3af), PoEP (IEEE 802.3at), 4PpoE (IEEE 802.3bt) and is tested according to IEC 60512-99-001/002 up to type 3
- Gold-plated contact area and tin-plated insulation displacement contact area
- Capacitive and inductive compensation
- Compatible with Cat 8.1 and full mechanical and electrical backwards compatibility with Cat 6A, 6 and 5e standard patch cords
- Automatic cutting of wires for precise, consistent termination
- X-Separator isolates pairs from each other, minimizing influence of cable termination on NEXT performance
- Use of all four sides of modules maximizes distance between pairs for optimum performance
- Unique termination design maximizes space for routing wires without sacrificing density
- Equipped with gauge to prevent RJ11/12 insertion
- Fits into 3rd party outlets and patchpanels with different adapters
- Wiring option according to TIA/EIA T568A and T568B without splitting of pair 3, 6
- Easy to read color wiring chart
- Optional termination tool available
- Halogen-free materials, ROHS II

PoE optimized PowerSafe IDC inside

Standards

IEC 60603-7
ISO/IEC 11801
TIA/EIA 568.2-D
EN50173-1

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)
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
Jack Type	RJ45, not suitable for RJ11/12 insertion

IDC Insulation Displacment Contact

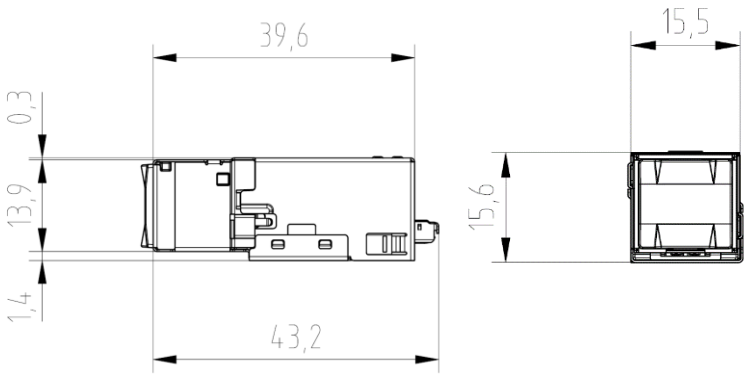
Description	Standard value	Relevant Standard	Typical value (at 20°C)
Mating cycles min.	> 750	ISO/IEC 11801	> 750
IEC 60352-3*	≥ 20		

*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°)
Dielectric strength			
Contacts	1000V DC or AC peak	IEC 60603-7	> 1000V DC
Contact to shield	1500V DC	IEC 60603-7	1500V 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	< 40mΩ
I/O resistance unbalance	< 50mΩ	IEC 60603-7	< 15mΩ
Current carrying capacity	1A @ 60ºC	IEC 60603-7	Pass

Dimensions



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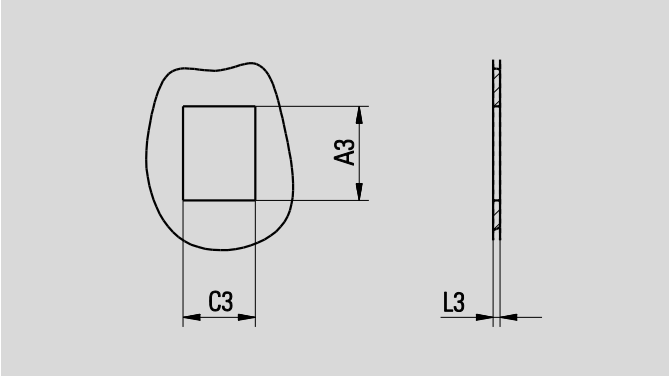
Available Adapters

Freenet	Keystone IEC	Keystone LARGE 20.3mm (UTP only)
	A3/L3: see below, STP/UTP different 	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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