

Actassi Category 7A GG45

Product Overview Catalogue

CLIPSAL[®]

by **Schneider Electric**

Your Complete Actassi 7A Solution



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D A T A C O M M S

Actassi™ Category 7A GG45

Overview

Established in 1920, Clipsal by Schneider Electric is Australia's number one brand of electrical products, accessories and solutions for the residential, data, industrial, home control and management markets. Throughout our history, Clipsal has evolved and grown from its Adelaide base with great success by supporting our local economy and providing products manufactured at multiple sites across Australia. In our role as an industry leader, Clipsal is dedicated to supplying you with the most innovative and sustainable solutions available. As part of Schneider Electric, the global specialist in energy management, Clipsal provides a total electrical solution for any project or application.



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Actassi Category 7A GG45

Technology waits for no business and in the Data Communications industry, there's a need for supported

Datacomms Category Classifications

The table below shows supported protocols, bandwidth, maximum transmission rates and recommended use for all categories.

	CAT. 3	CAT. 5/SE	CAT. 6	CAT. 6A	CAT. 7	CAT. 7A
Class classification	Class B	Class D	Class E	Class E _A	Class F	Class F _A
Supported protocols	Analog, Voice, ISDN, 10Base-T	1000Base-T and lower	1000Base-TX and lower	10GBase-T and lower	10GBase-T and lower	10GBase-T and lower
Bandwidth	16MHz	100MHz	200MHz/250MHz	500MHz	600MHz	1,000MHz
Maximum transmission rate	10Mbps	1,000Mbps (Gigabit Ethernet)	1,000Mbps (Gigabit Ethernet)	10Gbps	10Gbps and beyond	10Gbps and beyond
Usability	Predominantly telephone distribution systems.	Regular data and voice traffic.	Higher data traffic (multimedia, streaming).	High data traffic, backbone distribution systems, SAN.	High data traffic, backbone distribution systems, SAN.	High data traffic, backbone distribution systems, SAN.

infrastructure to evolve with it. A solution is required to fulfil the needs of today, and also for years to come. Clipsal's Actassi Category 7A GG45 can do it all...

A common problem for any organisation is the need to access more bandwidth. The Cat. 7A GG45 high bandwidth capacity of 1000MHz can support the requirements of 10 gigabits per second and beyond; filling this need for more bandwidth. This will prove to be more than a mere luxury — it will become a necessity when looking for longevity in a structured cabling solution for organisations in Australia and New Zealand.

Clipsal's Actassi Category 7A GG45 copper solution design is backward compatible. Standard RJ45 patch cords allow you to use the most current Ethernet protocol available. You can then upgrade to the GG45 patch cord in the future, as your business equipment becomes more advanced and able to process information at much faster speeds.

The Cat. 7A solution also overcomes expansion and building upgrade issues, for any pivotal business. Downtime is near impossible and infrastructure replacement cost far too high for critical applications such as hospitals, airports and banks, which rely on high bandwidth. By installing this versatile Cat. 7A cable in new buildings and refurbished wings, Australian and New Zealand businesses will ensure minimal time is lost upgrading in the future. Clipsal is offering exclusive access to the Actassi Category 7A GG45, to enable a seamless transition as new technology becomes available.

The Category 7A GG45 solution comprises:

- Components defined in ISO/IEC 11801 A2 to meet the performance requirements for Class F_A (or Augmented Class F).
- Shielded 24-port unloaded patch panels (straight and angled) give you flexibility on any application. Both come with mounting hardware.
- The shielded 1,000MHz, 12-contact connector is backwards compatible; capable of performing in line with all Category 6A parameters and below, and has a transmission performance of 1Gb–10Gbs. The GG45 connector has an RJ45 footprint (eight contacts across the top) and the additional four contacts on the bottom, create the full Cat. 7A interface. For Category 7A parameters, contacts three–six (at the top of the connector) are grounded by the activation of the switch at the rear. This isolates two contacts in each corner of the connector, reducing interference and allowing a transmission performance of beyond 10Gbs.
- Both the 4-pair S/FTP cable and the 4-pair S/FTP patch cord, have a braided shield and four individually screened pairs, to provide superior performance up to 1,000MHz and with no issues of alien crosstalk. The plug is designed to keep the separation of the pairs all the way through to the equipment.

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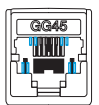
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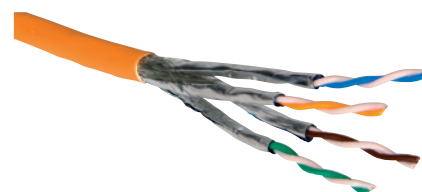


Actassi

Category 7A GG45

Cable

Clipsal's Actassi Category 7A GG45 Cable can easily be identified by its orange low smoke zero halogen (LS0H) cable jacketing, which comes standard. This 4-pair S/FTP cable has individually screened pairs and is fully compliant to the latest ISO/IEC 611801 and ISP/IEC 61156-6 Standards. It will perform up to 1,000MHz and headroom also exceeds Category 7A requirements.



2D4P7ALSF3R-OR

With superior electrical performance and characteristics to match, the Cat. 7A cable offers full immunity against alien crosstalk (AXT) and is suitable for transmission requirements of up to 10Gbps and more.

The cable has been designed for maximum output when used with the Clipsal Actassi Category 7A GG45 Connector.

Frequency (MHz)	Insertion Loss (dB/100m)	Return Loss (dB)	NEXT (dB)	PS NEXT (dB)	ACRF (dB)	PS ACRF (dB)	PS ANEXT (dB)	PS AACRF (dB)
	Max.	Min.	Min.	Min.	Min.	Min.	Min.	Min.
4	3.7	23.0	78.0	75.0	78.0	75.0	67.0	67.0
10	5.8	25.0	78.0	75.0	75.3	72.3	67.0	67.0
16	7.3	25.0	78.0	75.0	71.2	68.2	67.0	67.0
20	8.2	25.0	78.0	75.0	69.3	66.3	67.0	67.0
31.25	10.3	23.6	78.0	75.0	65.4	62.4	67.0	63.3
62.5	14.6	21.5	78.0	75.0	59.4	56.4	67.0	57.3
100	18.5	20.1	75.4	72.4	55.3	52.3	67.0	53.2
125	20.8	19.4	73.9	70.9	53.4	50.4	67.0	51.3
200	26.5	18.0	70.9	67.9	49.3	46.3	67.0	47.2
250	29.7	17.3	69.4	66.4	47.3	44.3	67.0	45.2
300	32.7	17.3	68.2	65.2	45.8	42.8	67.0	43.7
400	38.0	17.3	66.4	63.4	43.3	40.3	67.0	41.2
500	42.8	17.3	64.9	61.9	41.3	38.3	67.0	39.2
600.0	47.1	17.3	63.7	60.7	39.7	36.7	65.8	37.6
1000.0	61.9	15.1	60.4	57.4	35.3	32.3	62.5	33.2

Catalogue No.	Description
2D4P7ALSF3R-OR	Cable LAN Category 7A SFTP LSZH 305m Reel, orange

Specifications

Rated Temperature	60°C
Flammability Test	LSZH DEL 60332-1
Application	Horizontal wiring in LAN
Reference Standard	IEC61156-5
NVP	80%

Construction

Conductor	Solid bare copper
AWG	23
Insulation	Cellular PE
Insulated Wire Diameter	< 1.45mm
Jacket	LSZH
Outer Diameter	7.7mm
Element/Overall Screen	Aluminium bonded poly tape/Tinned copper braid

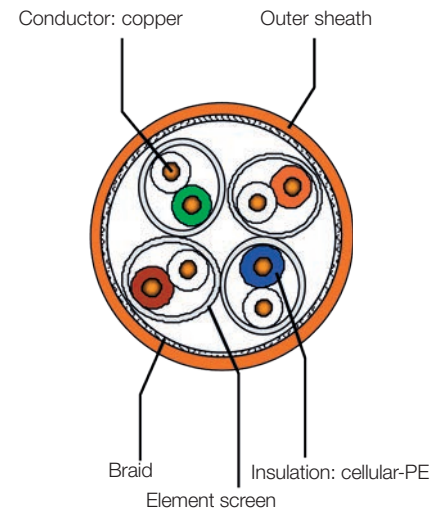
Electrical Characteristics

Characteristic Impedance	100 ± 5Ω
Delay Skew	≤45ns/100m
Propogation delay max @ 100mHz	≤536ns/100m
Max. Conductor d.c. Resistance 20°C	80Ohms/km

Mechanical Characteristics

Test Object	Jacket
Test Material	LSZH
Sheath Tensile Strength	≥9MPa
Bend radius: During Installation After Installed	80mm 40mm
Pulling Tension	210N (47lbf)
Storage Temp	-20°C to 60°C
Installation Temp	0°C to 50°C
Operation Temp	-20°C to 60°C

4-Pair



24-Port Patch Panel

The Clipsal Actassi Unloaded 7A 1RU 24-Port 19 Inch Rack Mountable Shielded Patch Panel meets the highest standards in both performance and functionality. The panel comes in two options:

Option 1 - RJ24USPP

A conventional straight panel, which offers you all the superior features and benefits that the market has come to expect from Clipsal's high-calibre patch panel range. For use in the Category 7A solution, the patch panel is purchased unloaded and connectors are purchased separately. This provides the flexibility to configure as the user requires. Each panel comes with the rear cable manager and all the necessary mounting hardware.

Option 2 - RJ24USPPAN

This is the latest addition to Clipsal's Patch Panel range. This 24-port angled panel comes with all the standard features and benefits of a market-leading angled patch panel, including the ability to route cables directly into the vertical cable managers (eliminating the need for horizontal cable management between panels). Once coupled with a Category 7A GG45 connector, no other solution in the market comes close to the Clipsal Category 7A solution. Utilising the angled patch panel can save on overall installation costs and it preserves space on the rack, and bend radius on the patch cords. For use in the Category 7A solution, the angled patch panel is purchased unloaded and connectors are purchased separately. This provides the flexibility to configure as the user requires. Each panel comes with all the necessary mounting hardware.

Features and benefits

- Nickel-plated and powder-coated frame with Earthing point.
- Robust powder-coated panels for longevity.
- Connectors are required to be purchased separately for flexibility.
- Universal colour coding to meet 568A or 568B Standards.
- Removable rear cable management tray (straight panel).
- Angled panel provides high density within your rack and removes the requirement for horizontal management.
- Comes complete with all necessary mounting and cable fixing hardware.

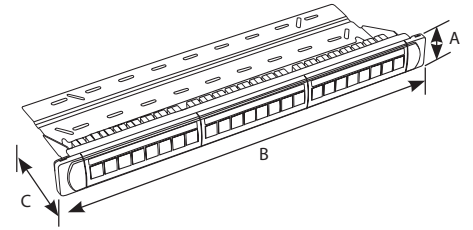


RJ24USPP



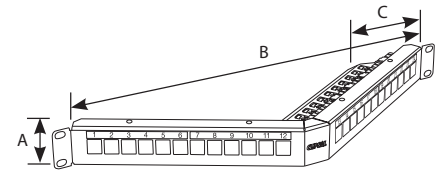
RJ24USPPAN

Catalogue No.	Description
RJ24USPP	Patch Panel 24-Port Shielded Unloaded
RJ24USPPAN	Patch Panel Angled 24-Port Shielded Unloaded



Dimensions

Product	A	B	C
RJ24USPP	44mm	482mm	124mm
RJ24USPPAN	44mm	482mm	140mm



Modular Connectors

The Clipsal Actassi Category 7A GG45 is a shielded, 12-contact, standardised, high-speed connector that's also backwards compatible; capable of performing in line with Cat. 6A, Cat. 6 and Cat. 5e parameters. When using a conventional RJ45 patch cord, the RJ45 service becomes available by bringing the upper eight contacts on the RJ45 connector, into operation. This provides the user with transmission performance of 1Gb–10Gbs (an operational bandwidth of 100MHz–500MHz).

For performance above what an RJ45 configuration can deliver, the GG45 patch cord is used. The additional contacts in the GG45 12-contact patch cord (eight contacts on the top and four contacts in the bottom) create the full Cat. 7A interface required for 1,000MHz transmission. The connector and GG45 patch cord, create a high performance solution using all eight corner contacts (two in each corner of the connector). The depression of an internal switch, located in the centre of the connector, grounds contacts three–six and isolates two contacts per corner. Without risk of interference or AXT, transmission performance of beyond 10Gbs can be achieved.

Connectors are available for solid and stranded cable, where a consolidation point is used. All connectors are keystone connectors, with a 30 Mech adaptor provided as standard.

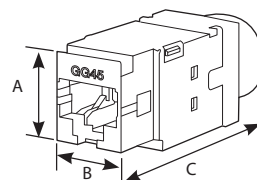


GG45SM7ASSD

Features and benefits

- Fully compliant to ISO/IEC 11801 Standards – "Connecting Hardware Requirements to Category 7A".
- Fully backwards compatible to Cat. 6A, Cat. 6 and Cat. 5e parameters.
- 360° screened for full protection against AXT.
- Compression type termination.
- Full terminating instructions.
- Stranded version for consolidation point or cross connect applications.

Catalogue No.	Description
GG45SM7ASSD	Cat. 7A GG45 Connector K/ST Shielded Solid
GG45SM7ASST	Cat. 7A GG45 Connector K/ST Shielded Stranded



Dimensions

Product	A	B	C
GG45SM7ASSD	16mm	14mm	45mm
GG45SM7ASST	16mm	14mm	45mm

Construction Characteristics	
Colour	Metallic
Screen	Yes
Connector type	RJ45 and tool-less IDC
Dimensional characteristics	
Height	16mm
Width	14mm
Depth	45mm
Usage characteristics	
Component function	Connector
Category	Cat. 7A
Range	Actassi

Frequency (in MHz)	Attenuation (in dB)		NEXT pp (in dB)		ACR-F (in dB)		RL (in dB)		Coupling Att (in dB)		PSANEXT (in dB)		PSAFEXT (in dB)	
	Max.	Typical	Min.	Typical	Min.	Typical	Min.	Typical	Min.	Typical	Min.	Typical	Min.	Typical
1	4.0	3.6	65.0	104.8	65.0	70.0	19.0	38.0	80.0	106.0	67.0	82.0	80.0	95.0
4	4.1	3.7	65.0	94.6	65.0	70.0	19.0	32.0	68.0	94.0	67.0	82.0	79.8	94.8
10	6.4	5.7	65.0	87.8	65.0	70.0	19.0	28.0	60.0	86.0	67.0	82.0	75.9	90.9
16	8.0	7.2	65.0	84.2	63.3	68.3	18.0	26.0	55.9	81.9	67.0	82.0	73.9	88.9
20	9.0	8.1	65.0	82.5	61.4	66.4	17.5	25.0	54.0	80.0	67.0	82.0	72.9	87.9
31.25	11.2	10.1	65.0	79.1	57.5	62.5	16.5	23.1	50.1	76.1	67.0	82.0	71.0	86.0
62.5	15.9	14.3	65.0	73.7	51.5	56.5	14.0	20.0	44.1	70.1	67.0	82.0	68.0	83.0
100	20.3	18.2	65.0	70.0	47.4	52.4	12.0	18.0	40.0	66.0	67.0	82.0	65.9	80.9
155	25.4	22.8	63.0	66.6	43.6	48.6	10.1	16.1	36.2	62.2	67.0	82.0	63.9	78.9
200	28.9	26.0	60.9	64.6	41.4	46.4	9.0	15.0	34.0	60.0	67.0	82.0	62.8	77.8
250	32.5	29.2	59.1	62.8	39.4	44.4	8.0	14.0	32.0	58.0	67.0	82.0	61.8	76.8
300	35.7	32.1	57.7	61.3	37.8	42.8	8.0	13.2	30.5	56.5	67.0	82.0	60.9	75.9
500	46.7	42.0	53.6	57.2	33.4	38.4	8.0	11.0	26.0	52.0	64.5	79.5	58.6	73.6
600	51.4	46.3	52.1	55.8	31.8	36.8	8.0	10.2	24.4	50.4	63.3	78.3	57.8	72.8
700	55.8	50.2	50.8	54.5	30.5	35.5	7.5	9.5	23.1	49.1	62.3	77.3	57.1	72.1
800	59.9	53.9	49.7	53.5	29.3	34.3	7.0	9.0	21.9	47.9	61.5	76.5	56.4	71.4
900	63.8	57.5	48.8	52.5	28.3	33.3	6.5	8.5	20.9	46.9	60.7	75.7	55.9	70.9
1000	67.6	60.8	47.9	51.6	27.4	32.4	6.0	8.0	20.0	46.0	60.0	75.0	55.4	70.4

Patch Cord

The Clipsal Actassi Category 7A GG45 Patch Cord is constructed as a 4-Pair S/FTP cable, with individually screened pairs and an overall braid, offered in orange low smoke zero halogen (LS0H) cable jacketing as the standard offer.

The GG45 patch cord design maximises the full performance of the channel, with pair separation all the way through to the plug. The uniquely designed plug has a switch activator, which triggers the grounding of contacts three–six of the GG45 connector. By using the eight extreme corner contacts on the connector, a bandwidth of 1,000Mhz and transmission of beyond 10Gbs can be achieved.



7AS10LPL-OR

Features and benefits

- High bandwidth patch cord for 40Gb applications.
- Complies with Class F and Class F_A ISO 11801 Standards.
- Self-latching, high reliability GG45 screened plugs.
- Strain-relief boot.
- Orange low smoke zero halogen (LS0H) sheath as standard.

Catalogue No.	Description
7AS10LPL-OR	Cat. 7A GG45 P/Cord LSZH SFTP 1m - Or
7AS20LPL-OR	Cat. 7A GG45 P/Cord LSZH SFTP 2m - Or
7AS30LPL-OR	Cat. 7A GG45 P/Cord LSZH SFTP 3m - Or
7AS50LPL-OR	Cat. 7A GG45 P/Cord LSZH SFTP 5m - Or
7AS100LPL-OR	Cat. 7A GG45 P/Cord LSZH SFTP 10m - Or
7AS200LPL-OR	Cat. 7A GG45 P/Cord LSZH SFTP 20m - Or

Termination/Stripping Tools

To assist with installation of the Clipsal Category 7A solution, Clipsal offers a S/FTP cable-stripping tool, used to prepare the termination of a cable in an efficient, consistent and precise manner.

Along with the stripping tool, comes a compression termination tool. It provides even pressure around the IDCs, to ensure a secure termination.

Catalogue No.	Description
SFTPST	SFTP Stripping Tool
GG45TT	Comfort Termination Tool



SFTPST



GG45TT

Actassi

Category 7A GG45

How It Works

Clipsal Cat. 7A S/FTP
Horizontal Cabling

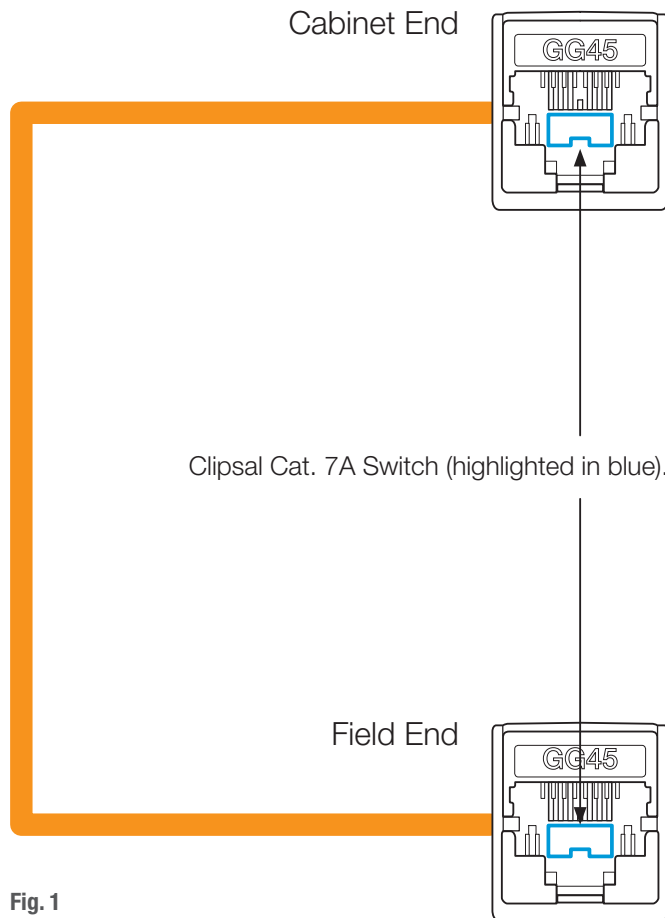


Fig. 1

The GG45 connector is a two-in-one switched connector.
The two modes of operation are:

- normal “RJ” mode
- high-speed (switch activated) “GG” mode.

When using the RJ45 patch cords (Cat. 6A, Cat. 6 or Cat. 5e), the connector can be used in RJ mode – as you would for a Cat. 6A, Cat. 6 or Cat. 5e installation. This will perform to the highest Category of the patch cord used.

When the GG mode is required in the future, a GG45 patch cord will be used (see fig. 2). The GG45 patch cord has the unique switch activator, designed as part of the patch cord. The switch activator is located on the tip of the plug (highlighted in blue on fig. 2), and the pair contact points are located on top and bottom of the plug.

When inserted into a GG45 connector, the switch in the connector is activated (highlighted in blue on fig.1). This grounds the four middle contacts to eliminate any interference to the transmission signal, and leaves only the four extreme outer-corner contacts active (highlighted in blue on fig. 3).

High-frequency performance is dependant on pair isolation. This is achieved by combining the GG45 connector with the GG45 patch cord.

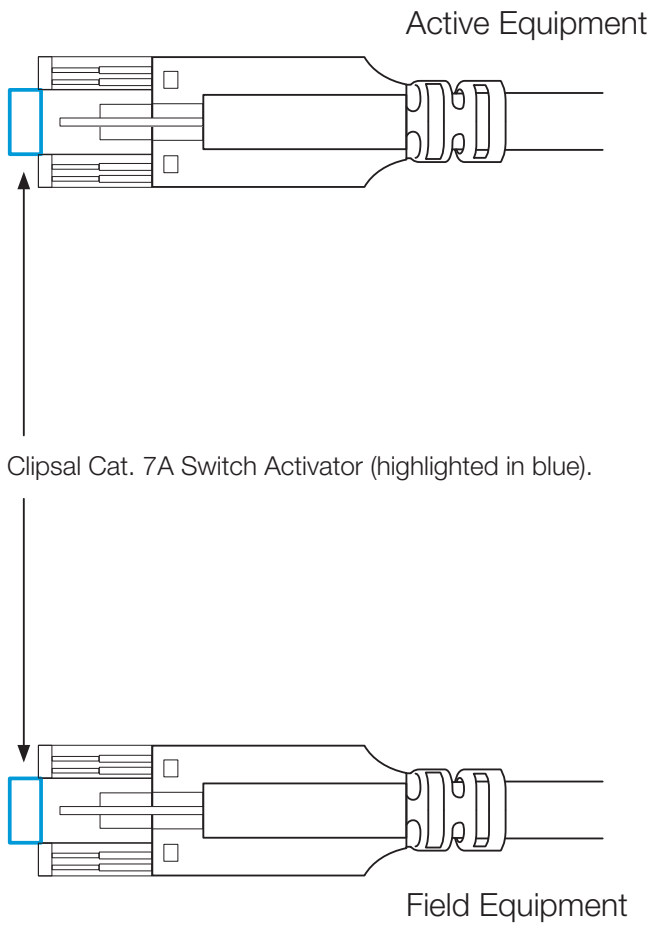
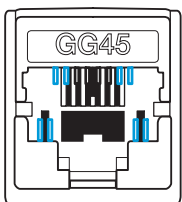


Fig. 2

For 1Gb–10Gbs capabilities, use a standard RJ45 Cat. 6 or Cat. 6A patch cord.



GG45 activation (active contacts are highlighted in blue).

Fig. 3

Schneider Electric (Australia) Pty Ltd

33-37 Port Wakefield Road, Gepps
Cross
South Australia 5094

PO Box 132, Enfield Plaza,
South Australia 5085

National Customer Care Enquiries:
1300 2025 25

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