

**LEGEND**

PERFORMANCE TECHNOLOGY

# BELDEN SECURITY

## Cable Range



**BELDEN**  
SENDING ALL THE RIGHT SIGNALS



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# BELDEN SECURITY CABLE RANGE 2013

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## PRODUCT FEATURES:

### Belden New Generation Banana Peel Composite Cables

Banana peel cables feature two, easy-to-install innovations:

- There's no overall jacket to strip off
- The four individual cables have color-coded and application-printed jackets for quick and easy identification and termination



### Belden New Generation Waterdog Cables

User-friendly waterdog paired, multi-conductor and coaxial cables meet the water-resistant standards of ul 444, ul 13 and the tia 455-82b water filtration test and are offered with Belden's industry-leading 10-year warranty.

They are ideal for standard indoor/outdoor building management applications such as:

- Power limited fire alarm circuits
- Intercom systems
- Audio and sound systems
- Access control systems
- CCTV surveillance systems
- Catv and distributed video systems
- Background music and white noise



## MODULAR PATCH PANEL (MIPP™)

### MIPP™: A Versatile, Modular Patch Panel

MIPP™ is a modular, flexible patch panel that combines both copper and fibre cabling in one innovative solution.

The MIPP™ is available as both single and double modules:

- **Single Modules**

- 6 x SC duplex adapters (up to 12 fibre connections)
- 6 x LC duplex adapters (up to 12 fibre connections)
- 4 x RJ45 keystone jacks

- **Double Modules**

- 12 x SC duplex adapters (up to 24 fibre connections)
- 12 x LC duplex adapters (up to 24 fibre connections)

Thanks to their compact dimensions, up to 6 modules can be combined in any permutation – and when required, each module can be easily removed or replaced for maximum flexibility.

#### The Advantages at a Glance

- Accommodating various media and connectors
- LC, SC fibre duplex adapters
- RJ45 copper keystone jacks (Shielded and Unshielded, CAT5e, CAT6, CAT6A)
- High port density for maximum use of available space
- Easy to use, allows space for handling cable and module is removable from unit to facilitate connection/splicing
- Splice tray and multiple fingers for easy fibre management
- Cable entry in two places (top or bottom) for ease of use and choice of placement in cabinet
- Resilient for protection against the harsher industrial environments
- Wide temperature range from -20°C to +70°C
- Available as part of a system with market leading Hirschmann™ switches and high performance Belden cabling for optimum reliability in Industrial Ethernet networks
- UL approval (UL 1863) pending



3 Module  
MIPP™



Double LC module



Single  
LC module

# MIPP™: MODULAR INDUSTRIAL PATCH PANEL

## CAT6 UTP and STP

Part No.	CAT6	Shielded
BEL-AD6A	2	No
BEL-AD6B	4	No
BEL-BD6B6A	6	No
BEL-BD6B6B	8	No
BEL-AD6C	2	Yes
BEL-AD6D	4	Yes
BEL-BD6D6C	6	Yes
BEL-BD6D6D	8	Yes

## Fibre OM3 and SM

Part No.	Fibre Type	Duplex Ports	Adapter
BEL-AD3A	OM3	6	LC
BEL-AD3B	OM3	6	SC
BEL-BD3A3A	OM3	12	LC
BEL-BD3B3B	OM3	12	SC
BEL-ADSA	SM	6	LC
BEL-ADSB	SM	6	SC
BEL-BDSASA	SM	12	LC
BEL-BDSBSB	SM	12	SC

Brilliance fibre connectors included

## Combination Fibre and CAT6 UTP (unshielded)

Part No.	CAT6 Ports	Fibre Type	Duplex Ports	Adapter
BEL-BD6A3A	2	OM3	6	LC
BEL-BD6A3B	2	OM3	6	SC
BEL-BD6B3A	4	OM3	6	LC
BEL-BD6B3B	4	OM3	6	SC
BEL-BD6ASA	2	SM	6	LC
BEL-BD6ASB	2	SM	6	SC
BEL-BD6BSA	4	SM	6	LC
BEL-BD6BSB	4	SM	6	SC

Brilliance fibre connectors included

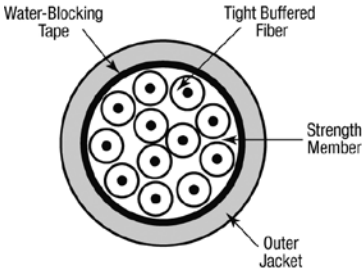
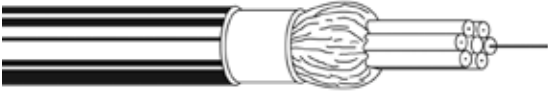
## Combination Fibre and CAT6 STP (shielded)

Part No.	CAT6 Ports	Fibre Type	Duplex Ports	Adapter
BEL-BD6C3A	2	OM3	6	LC
BEL-BD6C3B	2	OM3	6	SC
BEL-BD6D3A	4	OM3	6	LC
BEL-BD6D3B	4	OM3	6	SC
BEL-BD6CSA	2	SM	6	LC
BEL-BD6CSB	2	SM	6	SC
BEL-BD6DSA	4	SM	6	LC
BEL-BD6DSB	4	SM	6	SC

Brilliance fibre connectors included

# MULTIMODE OM3 FIBRE: INTERNAL/EXTERNAL RISER

- Halogen-free (FRNC/LSNH) UV resistant outer jacket
- Water-blocking tape and swell-able yarn prevents moisture ingress
- Flame retardant to IEC 60332-2
- Operating temperature -30°C to +70°C
- Predicted lifetime > 30 years

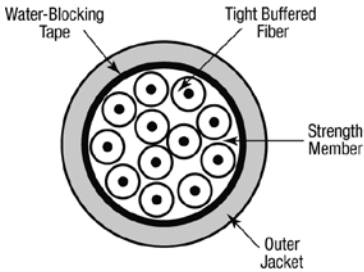
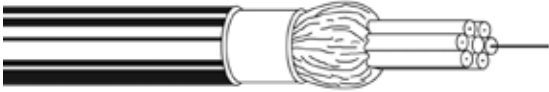


Fibre type	Mode-Field/Cladding Diameter (µm)	Wave-length (nm)	Attenuation Average/Max. (dB/km)	Bandwidth (MHz/km)	Ethernet Performance (mtr)		Num. Apert. (µm)
					1GBE	10GBE	
50/125 OM3	50 ± 2.5 125 ± 1	850 1300	2.5/3.0 0.5/1.0	≥1500 ≥500	900	300	0.20± 0.015
					550	N.A.	

Part No.	Fibres	Type	Waterblocked	NOM. O.D.
<b>BEL-GUMT304</b>	4	50/125 OM3	Waterblocked	5.4mm
<b>BEL-GUMT306</b>	6	50/125 OM3	Waterblocked	5.9mm
<b>BEL-GUMT308</b>	8	50/125 OM3	Waterblocked	5.9mm
<b>BEL-GUMT312</b>	12	50/125 OM3	Waterblocked	7.6mm

## SINGLEMODE FIBRE: INTERNAL/EXTERNAL RISER

- Halogen-free (FRNC/LSNH) UV resistant outer jacket
- Water-blocking tape and swell-able yarn prevents moisture ingress
- Flame retardant to IEC 60332-2
- Operating temperature -30°C to +70°C
- Predicted lifetime > 30 years



Fibre type	Mode-Field/Cladding Diameter (µm)	Wave-length (nm)	Attenuation Average/Max. (dB/km)	Dispersion ps/(nm-km)	PMD (ps/km)	Cable Cut-off Wave length (nm)
9/125 G.657A	8.9 ± 0.4 125 ± 0.3	1310 1550 1625	0.35/0.5 0.21/0.3 0.24/0.4	≤ 3.5 ≤ 18	≤ 0.2	≤ 1260

Part No.	Fibres	Type	Waterblocked	NOM. O.D.
BEL-GUMTA04	4	9/125 SM (G.657A)	Waterblocked	5.4mm
BEL-GUMTA06	6	9/125 SM (G.675A)	Waterblocked	5.9mm
BEL-GUMTA08	8	9/125 SM (G.675A)	Waterblocked	5.9mm
BEL-GUMTA12	12	9/125 SM (G.675A)	Waterblocked	7.6mm

# FIELD INSTALLABLE FIBRE OPTIC CONNECTORS

## FASTER

- Fibre Termination in as Few as 5 Seconds
- No Crimp Means Fewer Installation Steps
- Up and Running Quickly with Simple Installation Technique

## EASIER

- No Epoxy or Polishing Steps
- Universal Training and Tool Set
- Simplified Ordering and Inventory

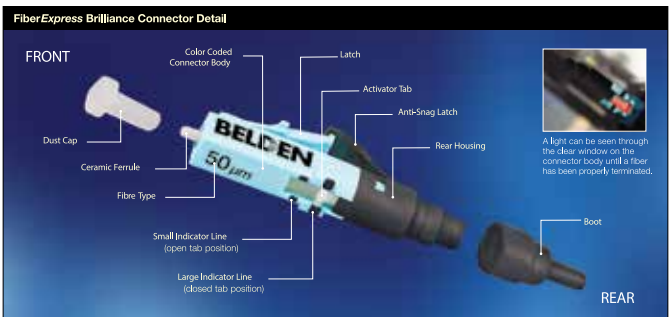
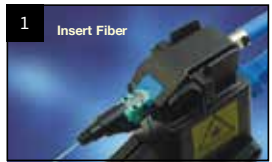
## BETTER

- Integrated VFL Improves Termination Yield
- Eliminate Cut-offs by Reterminating up to 5 times
- Reduce Training and Tooling Expense

### It Only Takes Three Simple Steps to Terminate the Connector

Perfect for use in the Data Center, Enterprise, Industrial, Defense, Healthcare or Telco/MSO environments, it only takes three simple steps to terminate the connector.

1. Prepare and insert the fibre.
2. Close the switch-like activator tab on the connector.
3. Install the boot.





# FIELD INSTALLABLE FIBRE OPTIC CONNECTORS

- OM3/OM4 available in LC, SC & ST
- Single mode OS2 available in LC, SC & ST
- 900µm boot included
- All-in-one installation kit



## Multimode OM3/OM4

Part No.	Fibre type	Connector
BEL-AX105202-S1	OM3/OM4	LC
BEL-AX105207-S1	OM3/OM4	SC
BEL-AX105212-S1	OM3/OM4	ST



## Singlemode OS2

Part No.	Fibre type	Connector
BEL-AX105203-S1	OS2	LC
BEL-AX105208-S1	OS2	SC
BEL-AX105209-S1	OS2	SC APC
BEL-AX105213-S1	OS2	ST

## Installation Kit



Part No.	Includes
BEL-AX104271	Precision cleaver, visual fault locator, fibre preparation tools

# INDUSTRIAL ETHERNET VS COMMERCIAL OFF THE SHELF (COTS) ETHERNET CABLES

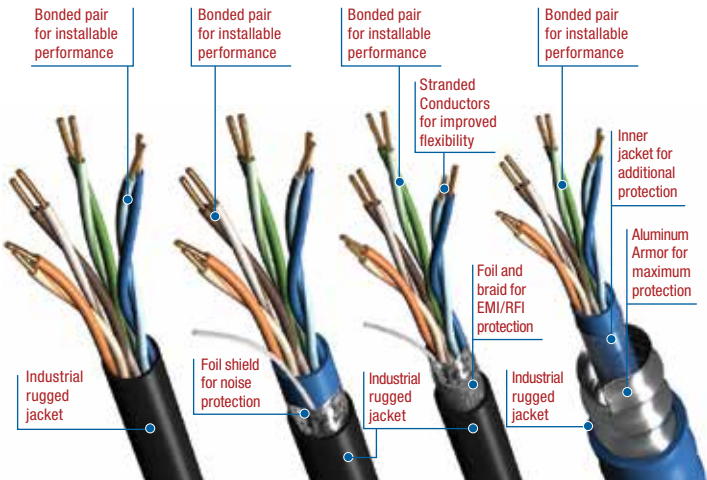
- Commercial off the shelf or COTS Ethernet cables are quite fragile compared to an industrial-grade cable.
- Industrial environments are very different to office environments and require a different approach to Ethernet cabling
- Belden DataTuff cables mean greater reliability
- Consider the real costs of cable failure
- Industrial Ethernet cables are “ruggedized” for High Mean Time Between Failure

In an industrial environment, Ethernet cables are typically used to carry signals between devices to make events happen on schedule.

- Time is the key.
- There is no margin for error.

By contrast, in an office setting signal transmission retries are usually acceptable when a fault occurs. The environment is more forgiving. Still another major difference between the two arenas is that unlike the office, industrial premises constantly experience harsh or extreme environments. For example:

- Extreme temperatures
- Abrasion
- Solvents & chemicals
- UV light
- Humidity & moisture
- EMI &/or RFI interference



# INDUSTRIAL ETHERNET SHIELDED CONNECTIVITY

- Shielded jacks and patch panels
- CAT6 shielded keystone jack
- Unloaded 24 port shielded patch panel – keystone

## CAT6 shielded keystone jack



Part No.	Type	Pairs	Colour
<b>BDNAX104596</b>	CAT6	Keystone style	Shielded

## Unloaded 24 Port Shielded Patch Panel



Part No.	Type	Pairs	Colour
<b>BDNAX104563</b>	Unloaded	Keystone style	Shielded

# MODULAR PATCH PANEL (MIPP™)

## MIPP™: A Versatile, Modula Patch Panel

- DIN-rail mountable
- Accommodates both copper and fibre
- Cable entry from bottom and top
- Compact size



3 Module  
MIPP™



Double LC module



Single  
LC module

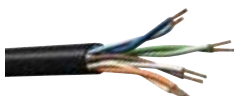
Refer to page 5 for more details and part numbers

# CAT5e COMMERCIAL GRADE & INDUSTRIAL ETHERNET

- Shielded and unshielded
- Indoor, Outdoor (UV stabilised) and Underground (Gel Filled)
- Foil/Braid dual screen option for noisy environments
- Low smoke zero halogen versions available

**APPLICATION:** IP devices such as CCTV cameras suitable for harsh environments

## CAT5e UTP - Unshielded 24 AWG



BEL-7918A-0101000

Part No.	Metres		
BEL-1583A-006U1000*	305	Indoor	
BEL-7918A-0101000	305	Outdoor UV	
BEL-M57561	305	Outdoor UV	Gel Filled

## CAT5e STP - Shielded 24 AWG



BEL-7919A-0101000

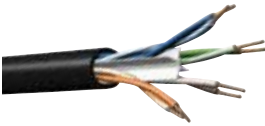
Part No.	Metres		
BEL-1633ENH.01305	305	Indoor	LSZH
BEL-7919A-0101000	305	Outdoor UV	
BEL-7921A-0101000	305	Outdoor UV	Foil/Braid
BEL-74001NH.00305	305	Outdoor UV	Foil/Braid, LSZH
BEL-7937A-0101000	305	Outdoor UV	Gel Filled

# CAT6 COMMERCIAL GRADE & INDUSTRIAL ETHERNET

- Shielded and unshielded
- Indoor, Outdoor (UV stabilised) and Underground (Gel Filled)
- Foil/Braid dual screen option for noisy environments
- Low smoke zero halogen versions available

**APPLICATION:** IP devices such as CCTV cameras suitable for harsh environments

## CAT6 UTP - Unshielded 24 AWG



BEL-7927A-0101000

Part No.	Metres		
BEL7814A-008A1000	305	Indoor	
BEL-7927A-0101000	305	Outdoor UV	23 AWG
BEL-M57622	305	Outdoor UV	Gel Filled

## CAT6 STP - Shielded 23 AWG



BEL-7953A-0101000

Part No.	Metres		
BEL-7860ENH.01500	500	Indoor	LSZH
BEL-7953A-0101000	305	Outdoor UV	

## CAT6 Armoured 23 AWG - Aluminium Interlocked Armour



Part No.	Metres	
BEL121872A-0101000*	305	Armoured

\*Order as required. Items might have up to 12 weeks of lead time.  
For more information contact your LPT sales representative.

# CCTV COAX: A FEW CONSIDERATIONS

## Conductor

Cable with copper covered steel conductors, whilst cheaper, are designed for free-to-air and pay tv applications. For CCTV applications, the coax cable should have a bare copper conductor.

## RG Type

RG59 is the most widely used coax for CCTV applications. RG6 and RG11 can also be used if selected correctly and will extend the distance that the CCTV signals can be sent. When selecting a coax for CCTV purposes look at the conductor material and size, dielectric material and the shield coverage.

## Shielding

Braid shields are most effective at low frequencies and a CCTV signal is a low frequency signal. The more coverage the braid provides the more noise it will block from interfering with the signal quality. For CCTV applications, the coax cable should have a copper braid with 95% coverage.

## Dielectric

The dielectric is the white or clear part covering the conductor, underneath the shield. The dielectric can be made from a number of different materials. Dielectric materials that are foamed or injected with air perform better than those that are made from a solid material. For CCTV applications, the coax cable should have a dielectric made from foamed polyethelene.

## Distances

CCTV signals can be sent more than 100m over an RG59 coax if the correct cable is selected. The distance that the cable can transmit a clear, good quality signal is determined by a combination of:

- Conductor material and size
- Shield coverage
- Dielectric material

RG-Type	Belden Cable Type	Transmission Distance
59	543945	300 Metres
6	533945	450 Metres
11	513945	900 Metres

## COAX FOR CCTV

- Bare copper conductor (RG59: 20AWG, RG6: 18AWG)
- 95% copper Braid
- Black UV resistant Jacket
- RG59 Composite: 2 core 18AWG power
- Waterblocked option to protect against water ingress

**APPLICATION:** Coax for mission critical CCTV monitoring

### RG59 20AWG Bare Copper Conductor



Part No.	Metres		Waterblocked
BEL-543945-0101000	305	RG59	
BEL-5439X5-0101000	305	RG59	Waterblocked

### RG59 Composite: Coax 20AWG Bare Copper. Power 2 core 0.8mm<sup>2</sup>



Part No.	Metres		Waterblocked
BEL-549945-0101000*	305	RG59	
BEL-5499X5-0101000*	305	RG59 composite	Waterblocked

### RG6 18AWG Bare Copper Conductor



Part No.	Metres		Waterblocked
BELS533945-0101640	500	RG6	
BELS5339X5-0101640	500	RG6	Waterblocked

\*Order as required. Items might have up to 12 weeks of lead time.  
For more information contact your LPT sales representative.

## PTZ CCTV COAX

- Banana Peel construction for quick & easy installation and termination
- Video: RG59 20AWG Bare copper conductor, 95% copper braid
- Control: 2pr 22AWG Shielded
- Power: 2 conductor 14 AWG

**APPLICATION:** All-in-one cable for Pan-Tilt-Zoom CCTV cameras

### PTZ RG59 20AWG Bare Copper Conductor



Part No.	Metres
<b>BEL-504PTZ-0001000*</b>	305

\*Order as required. Items might have up to 12 weeks of lead time.  
For more information contact your LPT sales representative.

## Advantages of Banana Peel Cables

Banana Peel cables feature two, easy-to-install innovations:

- There's no overall jacket to strip off
- The four individual cables have color-coded and application-printed jackets for quick and easy identification and termination

### PTZ Cable Detail

Individual cable jacket colour coding system.

Application	Jacket Colour	Cable Type
Video	Black	20 AWG BC conductor 95% braid
Power	White	2 core 14 AWG unshielded
PTZ control	Blue	2 pair 22 AWG shielded



# BNC: 1 PIECE COMPRESSION CONNECTORS

- True 75 Ohm connector for CCTV and HDTV video
- Fits most coax cables
- Non-blind cable entry into centre pin makes termination quick and easy
- Internal 360° compression rings provide excellent holding strength

**APPLICATION:** CCTV cameras, HD CCTV cameras, AV & broadcast

## BNC FOR RG59 COAX CABLES



Part No.	Conductor O.D.		Dielectric		Jacket	
	Min	Max	Min	Max	Min	Max
<b>BEL-DB59BNCU</b>	0.81mm	0.86mm	3.66mm	3.99mm	5.89mm	6.93mm
<b>BEL-DB59BNCBU</b>	0.54mm	0.60mm	3.66mm	3.99mm	5.89mm	6.93mm

BEL-DB59BNCU fits the following Belden cables:

- 543945
- 5439X5
- 1505A

BEL-DB59BNCBU fits the following Belden cables:

- 8241B
- 8241

## BNC FOR RG6 COAX CABLES

Part No.	Conductor O.D.		Dielectric		Jacket	
	Min	Max	Min	Max	Min	Max
<b>BEL-DB6BNCU</b>	1.01mm	1.06mm	4.57mm	4.90mm	6.73mm	7.75mm

BEL-DB6BNCU fits the following Belden cables:

- 533945
- 5339X5
- 1694A

## BNC Compression tool



Part No.  
BEL-CPLCRBC-BR

Suits BNC's  
BEL-DB59BNCU  
BEL-DB59BNCBU  
BEL-DB6BNCU

## LOW VOLTAGE POWER DOUBLE INSULATED

- 2 conductor 0.8 to 3.3 mm<sup>2</sup>
- More robust and durable than figure 8
- Waterblocked UV resistant option to protect against water ingress

**APPLICATION:** To power low voltage devices, eg CCTV cameras

### 18 AWG (0.8mm<sup>2</sup>)



Part No.	Metres	Max. Current	Waterblocked
BEL-5300UE-0091000	305	5 Amps	
BEL-5300UE-0091640	500	5 Amps	
BEL-5300U1-0081000	305	5 Amps	Waterblocked
BELS5300U1-0081640	500	5 Amps	Waterblocked

### 16 AWG (1.3mm<sup>2</sup>)



Part No.	Metres	Max. Current	Waterblocked
BEL-8471-0601000	305	7.1 Amps	
BEL-5240U1-0101000	305	6.1 Amps	Waterblocked
BEL-5240U1-0101640	500	6.1 Amps	Waterblocked

### 14 AWG (2.0mm<sup>2</sup>)



Part No.	Metres	Max. Current	Waterblocked
BEL-8473-0601000*	305	9.6 Amps	N/A

### 12 AWG (3.3mm<sup>2</sup>)



Part No.	Metres	Max. Current	Waterblocked
BEL-8477-0601000*	305	13 Amps	N/A

# ACCESS CONTROL BANANA PEEL CABLE

- Banana Peel construction for quick & easy installation and termination
- Card Reader: 6 Conductor 22AWG Shielded
- Door Contact: 4 Conductor 22AWG
- Lock Power: 4 Conductor 18AWG
- REX/Spare: 4 Conductor 22AWG

**APPLICATION:** All-in-one cable for access control systems

## Access Control Banana Peel Cable

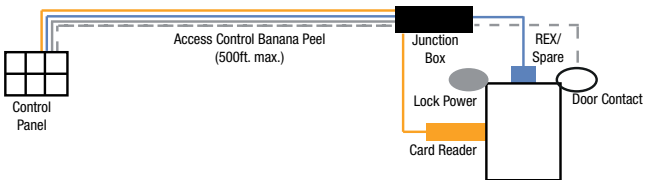


Part No.	Metres
<b>BEL558GMS-0001000</b>	305
<b>BEL-558GMS-000500</b>	152

## How Does Access Control Work?

Individual cable jacket colour coding system.

Application	Jacket Colour	Cable Type
Lock Power	Gray	4 core 18AWG unshielded
Card Reader	Orange	6 core 22AWG shielded
Door Contact	White	4 core 22AWG unshielded
REX/Spare	Blue	4 core 22AWG unshielded



# LOW CAPACITANCE MULTI PAIR SHIELDED CABLES

- Low capacitance RS-232, RS-422, RS-485
- Tinned copper 24 AWG, 7/020 stranded conductors

**APPLICATION:** Card readers, access control panels, PTZ camera's

## RS-232 - 24 AWG



Part No.	Metres	No. of pairs	
BEL-9501-0601000	305	1 pair	Foil Shield
BEL-9502-0601000	305	2 pair	Foil Shield
BEL-9503-0601000	305	3 pair	Foil Shield
BEL-9504-0601000	305	4 pair	Foil Shield
BEL-9506-0601000	305	6 pair	Foil Shield

## RS-232/422 - 24 AWG



Part No.	Metres	No. of pairs	
BEL-1419A-0601000*	305	2 pair	Foil Shield
BEL-1420A-0601000*	305	3 pair	Foil Shield
BEL-1421A-0601000*	305	4 pair	Foil Shield
BEL-1423A-0601000*	305	6 pair	Foil Shield
BEL-8102-0601000	305	2 pair	Foil/Braid Shield
BEL-8103-0601000	305	3 pair	Foil/Braid Shield
BEL-8104-0601000	305	4 pair	Foil/Braid Shield
BEL-8110-060500*	152	10 pair	Foil/Braid Shield
BEL-8112-0601000*	305	12 pair	Foil/Braid Shield

## RS-485 - 24 AWG



Part No.	Metres	No. of pairs	
BEL-9841-0601000	305	1 pair	Foil/Braid Shield
BEL-9842-0601000	305	2 pair	Foil/Braid Shield
BEL-9843-0601000	305	3 pair	Foil/Braid Shield
BEL-9844-0601000	305	4 pair	Foil/Braid Shield

# 1, 2 & 3 PAIR INDIVIDUALLY SHIELDED CABLES

- 1 pr 0.3mm to 0.8mm<sup>2</sup>
- 2 pr 8723 & 3 pr 8777 is individually shielded

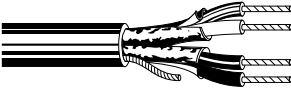
**APPLICATION:** Security LAN cable for Access Control, PTZ cameras & sensors

## 1 Pair Overall Foil Shield



Part No.	Metres	AWG (mm <sup>2</sup> )
BEL-8761-0601000	305	22 AWG (0.3mm)
BEL-8762-0601000	305	20 AWG (0.5mm)
BEL-8760-0601000	305	18 AWG (0.8mm)
BEL-8760-060U1000	305	18 AWG (0.8mm)

## 2 Pair Individually Shielded



Part No.	Metres	AWG (mm <sup>2</sup> )
BEL-8723-0601000	305	22 AWG (0.3mm)
BEL-8723-060U1000	305	22 AWG (0.3mm)

## 3 Pair Individually Shielded



Part No.	Metres	AWG (mm <sup>2</sup> )
BEL-8777-0601000*	305	22 AWG (0.3mm)

\*Order as required. Items might have up to 12 weeks of lead time. For more information contact your LPT sales representative.

## MULTI CONDUCTOR UNSHIELDED CABLES

- 0.3mm to 0.8mm<sup>2</sup>
- 2 conductor to 5 conductor
- Waterblocked option to protect against water ingress

**APPLICATION:** Card readers, access control panels, PTZ camera's

### 22 AWG (0.3mm<sup>2</sup>)

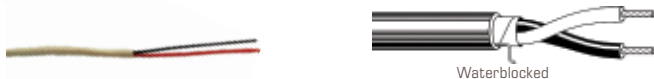


BEL-8442/5500UE

BEL-8445-0601000

Part No.	Metres	No. of Conductors	Waterblocked
<b>BEL-8442-0601000</b>	305	2	
<b>BEL-5500UE-0081000</b>	305	2	
<b>BEL-5500UE-0081640</b>	500	2	
<b>BEL-8445-0601000</b>	305	5	

### 18 AWG (0.8mm<sup>2</sup>)



Waterblocked

Part No.	Metres	No. of Conductors	Waterblocked
<b>BEL-5300UE-0091000</b>	305	2	
<b>BEL-5300UE-0091640</b>	500	2	
<b>BEL-5300U1-0081000</b>	305	2	Waterblocked
<b>BEL5300U1-0081640</b>	500	2	Waterblocked

# MULTI CONDUCTOR SHIELDED CABLES

- 0.2mm to 0.8mm<sup>2</sup>
- 2 conductor to 8 conductor
- Overall foil shield
- Waterblocked option to protect against water ingress

**APPLICATION:** Card readers, access control panels, PTZ camera's

## 24 AWG (0.2mm<sup>2</sup>)



Part No.	Metres	No. of Conductors	Waterblocked
BEL-9534-0601000	305	4	
BEL-9536-0601000	305	6	
BEL-9538-0601000	305	8	

## 22 AWG (0.3mm<sup>2</sup>)



Part No.	Metres	No. of Conductors	Waterblocked
BEL-5500F1-0081000	305	2	Waterblocked
BELS5500F1-0081640	500	2	Waterblocked
BEL-8723-0601000	305	4	Note 1
BEL-8777-0601000*	305	6	Note1

Note 1: individually shielded pairs

## 18 AWG (0.8mm<sup>2</sup>)



Part No.	Metres	No. of Conductors	Waterblocked
BEL-8770-0601000	305	3	
BEL-9418-060-1000	305	4	
BEL-5302F1-0101000*	305	4	Waterblocked

\*Order as required. Items might have up to 12 weeks of lead time.  
 For more information contact your LPT sales representative.

## PA/SPEAKER CABLES

- 0.8 to 3.3 mm<sup>2</sup>
- Double Insulated
- 8471, 8473, 8477, 5240U1 high strand professional audio
- Waterblocked UV resistant option to protect against water ingress

**APPLICATION:** Public address systems, speakers and professional audio

### 18 AWG (0.8mm<sup>2</sup>)



Waterblocked

Part No.	Metres	No. Conductors	Waterblocked
BEL-5300UE-0091000	305	2	
BEL-5300UE-0091640	500	2	
BEL-5300U1-0081000	305	2	Waterblocked
BELS5300U1-0081640	500	2	Waterblocked

### 16 AWG (1.3mm<sup>2</sup>)



Waterblocked

Part No.	Metres	No. Conductors	Waterblocked
BEL-8471-0601000	305	2	
BEL-5240U1-0101000	305	2	Waterblocked
BEL-5240U1-0101640	500	2	Waterblocked

### 14 AWG (2.0mm<sup>2</sup>)



Part No.	Metres	No. Conductors	Waterblocked
BEL-8473-0601000*	305	2	

### 12 AWG (3.3mm<sup>2</sup>)



Part No.	Metres	No. Conductors	Waterblocked
BEL-8477-0601000*	305	2	



## GLOSSARY

<b>AWG</b>	American Wire Gage. Refers to the size of the conductor, the smaller the AWG number the larger the conductor diameter.
<b>BC</b>	Bare Copper
<b>BCCS</b>	Bare Copper Covered Steel
<b>BRAID</b>	Type of shielding commonly found in coax cables. The braid blocks external noise from entering the cable and helps to minimise signal loss from within the cable. For CCTV applications the braid should be bare copper and 95% coverage.
<b>CCTV</b>	Closed Circuit Television
<b>CATV</b>	Community Access Television: Free-to-Air or Pay-TV such as Foxtel or Austar.
<b>COND</b>	Conductor. Centre part of the cable that conducts or carries the signal. Made from a variety of metals including bare copper, copper covered steel, tinned copper and silver plated copper.
<b>DIELECTRIC</b>	Insulating material between conductors. In coax cables it is between the center conductor and the shield.
<b>FPE</b>	Foam (or gas injected) polyethelene. A dielectric material.
<b>HDPE</b>	High Density Polyethylene. A dielectric material.
<b>IMPEDANCE</b>	A number that describes the opposition to signal flow in a cable and is measured in Ohm's. Coax cables for video are 75 Ohm where as coax cables for wireless RF applications are typically 50 Ohm.

## GLOSSARY

### IMPEDANCE MISMATCH

Occurs when components (cable, connectors, etc) within a system do not have the same impedance causing the signal to be reflected back and resulting in signal loss. The impedance of 75 Ohm cable is not exactly 75 Ohm, it will have a variance, for example 75 +/- 3 Ohm's. Greater variance results in more signal loss and lower quality image.

### LSZH

Low Smoke Zero Halogen (LSZH) cables produce less smoke and release little or no halogen gas while burning.

### MATV

Master Antenna Television.

### PE

Polyethelene. A dielectric material.

### PLENUM CABLE

A cable that is designed to be safely used in a plenum space or cavity.

### PLENUM SPACE

A plenum space or cavity is an enclosed area (in the ceiling or below the floor) that contains all services, heating, air conditioning, power and data. Commonly used in the USA but not in Australia.

### GLOSS

Polyvinylchloride. A dielectric and jacket material.

### STP

Shielded Twisted Pairs.

### UTP

Unshielded Twisted Pairs.

### VP

Velocity of Propagation: the speed at which the signal travels down the conductor. Expressed as a percentage of the speed of light.

A higher VP value contributes to the signal being sent a further distance.

VP is influenced by the shield coverage, conductor material and dielectric material.

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