



## **Technical Information**

### **BS5308 Part 1**

**BS5308 Cable Part 1 Color Code**  
**BS5308 Cable Part 1 Ordering Code**

### **BS5308 Part 2**

**BS5308 Cable Part 2 Color Code**  
**BS5308 Cable Part 2 Ordering Code**

### **Instrument Cables to ESI 09-6**

**Colour Code and Ordering Code**





### Instrument Cables BS 5308 Part 1 Colour code

#### BS 5308 Part 1 Colour Identification

Pair No.	a-wire	b-wire	Pair No.	a-wire	b-wire
1	Black	Blue	26	White	Yellow
2	Black	Green	27	Red	Yellow
3	Blue	Green	28	Orange	Yellow
4	Black	Brown	29	Black	Grey
5	Blue	Brown	30	Blue	Grey
6	Green	Brown	31	Green	Grey
7	Black	White	32	Brown	Grey
8	Blue	White	33	White	Grey
9	Green	White	34	Red	Grey
10	Brown	White	35	Orange	Grey
11	Black	Red	36	Yellow	Grey
12	Blue	Red	37	Black	Violet
13	Green	Red	38	Blue	Violet
14	Brown	Red	39	Green	Violet
15	White	Red	40	Brown	Violet
16	Black	Orange	41	White	Violet
17	Blue	Orange	42	Red	Violet
18	Green	Orange	43	Orange	Violet
19	Brown	Orange	44	Yellow	Violet
20	White	Orange	45	Grey	Violet
21	Red	Orange	46	Black	Turquoise
22	Black	Yellow	47	Blue	Turquoise
23	Blue	Yellow	48	Green	Turquoise
24	Green	Yellow	49	Brown	Turquoise
25	Brown	Yellow	50	White	Turquoise

Single Quad (2 pair) are colour coded in clockwise order of rotation: Black, Blue, Green and Brown  
 Individually screened pairs can also be identified by means of a polyester tape over blue and black pairs  
 For cables in triple configuration please request colour code at time of enquiry



### Instrument Cables BS 5308 Part 1- PE Insulated

#### VDE Reference Code

##### PVC Sheath Version:

RE-2Y(St)Y (Overall Screen)

RE-2Y(St)Y PiMF(Individual Screen+Overall Screen)

RE-2Y(St)Y-SWA-Y(Overall Screen+Steel Wire Amour)

RE-2Y(St)Y PiMF-SWA-Y(Individual Screen+Overall Screen+Steel Wire Amour)

##### LSOH Sheath Version:

RE-2Y(St)H (Overall Screen)

RE-2Y(St)HPiMF(Individual Screen+Overall Screen)

RE-2Y(St)-SWA-H(Overall Screen+Steel Wire Amour)

RE-2Y(St)HPiMF-SWA-H(Individual Screen+Overall Screen+ Steel Wire Amour)

#### Ordering Code

##### CCA -BC-DEFGH-IJ-K-LM

###### A- Cable Series

FSN=FIRESCREEN

###### B- Screen Type

US=Unscreen; OS=Overall Screen

IS=Individual Pair Screen;

IOS=Individual Pair Screen and Overall Screen;

FRUS=Fire Resistant Unscreen;

FROS=Fire Resistant Overall Screen;

FRIS=Fire Resistant Individual Pair Screen;

FRIOS=Fire Resistant Individual Pair Screen+Overall Screen

###### C- Rated Voltage

115=115/300V; 300=300/500V; 450=450/750V; 600=600/1000V

###### D- Insulation

2X= XLPE; Y= PVC; 2Y= PE;

H= LSHF; O2Y= Foam PE



**E- Screening**

ST=Aluminum / Polyester Tape

PIMF=Pair Shield with Aluminum/Polyester Tape

PIC= Pair Shield with Copper Braid

**F- Inner Sheath/ Bedding**

Y= PVC; 2Y= PE; H= LSHF

**G- Armouring**

SWA=steel wire armour; STA=steel tape armour; SWB=steel wire braid;

DSTA= double steel tape armour

**H- Sheath**

Y= PVC; Yu= FR-PVC;

Yv=Reinforced PVC; 2Y= PE;

H=LSHF

**I- No.of cores/Pairs/Triads/Quads**

2C=2cores; 3C=3cores; 4C=4cores

**J- Cross Section Area/Wire Gauge**

1.5S=1.5mm<sup>2</sup>; 2.5=2.5mm<sup>2</sup>

1.91S(39/0.21)=1.91 mm<sup>2</sup> (39/0.21mm)

24A(7)=24 AWG(7Strand)

24A(16/0.2)=24 AWG(16/0.2mm)

**K- Standard(option)**

530811=BS5308-1 Type1; 530812=BS5308-1 Type2; 530813=BS5308-1 Type3;

530821=BS5308-2 Type1; 530822=BS5308-2 Type2;

**L- Fire Propagation Level(option)**

1=IEC60332-1; 3C=IEC60332-3C; 3A=IEC60332-3A

**M- Fire Resistant Level(option)**

331=IEC 60331; 6387CWZ=BS 6387 CWZ



## Instrumentation Cables

### Ordering Options:

1) **Conductor:** Bare or Tinned Copper

2) **Conductor Size:** BS 6360/EN 60228

Size	Class 1	Class 2	Class 5	Class 6
0.5mm <sup>2</sup>	1/0.8mm	7/0.3mm	16/0.2mm	28/0.15mm
0.75mm <sup>2</sup>		7/0.37mm	24/0.2mm	42/0.15mm
1.0mm <sup>2</sup>	1/1.13mm	7/0.44mm	32/0.2mm	56/0.15mm
1.5mm <sup>2</sup>		7/0.53mm	30/0.25mm	84/0.15mm
2.5mm <sup>2</sup>		7/0.67mm	50/0.25mm	140/0.15mm

3) **Conductor Resistance:** BS 6360/EN 60228

Nominal cross-section area mm <sup>2</sup>	Plain copper conductor wires (Ohm/km)		Tinned copper conductor wires (Ohm/km)	
	class 1 and 2	Class 5 and 6	class 1 and 2	Class 5 and 6
0.5mm <sup>2</sup>	36	39	36.7	40.1
0.75mm <sup>2</sup>	24.5	26	24.8	26.7
1.0mm <sup>2</sup>	18.1	19.5	18.2	20
1.5mm <sup>2</sup>	12.1	13.3	12.2	13.7
2.5mm <sup>2</sup>	7.41	7.98	7.56	8.21

3) **Insulation:** PE/XLPE/LSF/LSOH

4) **Screening:** Aluminum Tape/Copper Braid

5) **Cabling:** Multicore/Multipair/Multitrip

6) **Bedding/Sheath Material:** PE /PVC/LSF/LSOH

7) **Armouring:** Steel Tape Armour/Steel Wire Armour

8) **Fire Performance:**

IEC 60332-1(for Flame Retardant PVC Sheath)

IEC 60332-3C(for Flame Retardant PVC/LSOH Sheath)

IEC 61034 Part 1&Part 2 (LSOH Sheath)

IEC 60754 Part 1&Part 2 (5%-15%LSF Sheath & 0.5%LSOH Sheath)

Oxygen Index(32%-40% depending on different LSOH compound )

Temperature Index(250°C-300°C,depending on different LSOH compound)

IEC 60331 (for Fire Resistant Type)



### Instrument Cables BS 5308 Part 2 Colour code

#### BS 5308 Part 2 Colour Identification

Pair No.	a-wire		b-wire	Pair No.	a-wire		b-wire
1	White		Blue	26	Red	Blue	Blue
2	White		Orange	27	Red	Blue	Orange
3	White		Green	28	Red	Blue	Green
4	White		Brown	29	Red	Blue	Brown
5	White		Grey	30	Red	Blue	Grey
6	Red		Blue	31	Blue	Black	Blue
7	Red		Orange	32	Blue	Black	Orange
8	Red		Green	33	Blue	Black	Green
9	Red		Brown	34	Blue	Black	Brown
10	Red		Grey	35	Blue	Black	Grey
11	Black		Blue	36	Yellow	Blue	Blue
12	Black		Orange	37	Yellow	Blue	Orange
13	Black		Green	38	Yellow	Blue	Green
14	Black		Brown	39	Yellow	Blue	Brown
15	Black		Grey	40	Yellow	Blue	Grey
16	Yellow		Blue	41	White	Orange	Blue
17	Yellow		Orange	42	White	Orange	Orange
18	Yellow		Green	43	White	Orange	Green
19	Yellow		Brown	44	White	Orange	Brown
20	Yellow		Grey	45	White	Orange	Grey
21	White	Blue	Blue	46	Orange	Red	Blue
22	White	Blue	Orange	47	Orange	Red	Orange
23	White	Blue	Green	48	Orange	Red	Green
24	White	Blue	Brown	49	Orange	Red	Brown
25	White	Blue	Grey	50	Orange	Red	Grey

\*For bi- coloured cores the first colour is the base colour

Single Quad (2 pair) are colour coded in clockwise order of rotation: Black, Blue, Green and Brown  
Individually screened pairs can also be identified by means of a polyester tape over blue and white pairs  
For cables in triple configuration please request colour code at time of enquiry



## **Instrument Cables BS 5308 Part 2- PVC Insulated**

### **VDE Reference Code**

#### **PVC SheathType:**

RE-Y(St)Y (Overall Screen)

RE-Y(St)Y PiMF(Individual Screen+Overall Screen)

RE-Y(St)Y-SWA(Overall Screen+Steel Wire Amour)

RE-Y(St)Y PiMF-SWA(Individual Screen+Overall Screen+Steel Wire Amour)

#### **LSOH SheathType:**

RE-H (St)H(Overall Screen)

RE-H(St)HPiMF(Individual Screen+Overall Screen)

RE-H(St)-H-SWA(Overall Screen+Steel Wire Amour)

RE-H(St)HPiMF-SWA(Individual Screen+Overall Screen+ Steel Wire Amour)

### **Ordering Code**

#### **CCA-BC-DEFGH-IJ-K-LM**

##### **A- Cable Series**

FSN=FIRESCREEN

##### **B- ScreenType**

US=Unscreen; OS=Overall Screen; IS=Individual Pair Screen;

IOS=Individual Pair Screen+Overall Screen; FRUS=Fire Resistant Unscreen;

FROS=Fire Resistant Overall Screen; FRIS=Fire Resistant Individual Pair Screen;

FRIOS=Fire Resistant Individual Pair Screen+Overall Screen

##### **C- Rated Voltage**

115=115/300V; 300=300/500V;

450=450/750V; 600=600/1000V

##### **D- Insulation**

2X=XLPE; Y=PVC; 2Y=PE;

H=LSOH; O2Y= Foam PE



**E- Screening**

ST=Aluminum/Polyester Tape

PIMF=Pair Shielded with Aluminum/Polyester Tape

PIC=Pair Shielded with Copper Screen

**F- Sheath**

Y=PVC; 2Y=PE; H=LSOH

**G- Armouring**

SWA=Steel Wire Armour; STA= Steel Tape Armour; SWB= Steel Wire Braid Armour;

DSTA= Double Steel Tape Armour

**H- Sheath**

Y= PVC; Yu= FR-PVC;

Yv=Reinforced PVC; 2Y= PE;

H=LSHF

**I- No.of cores/Pairs/Triads/Quads**

2C=2cores; 3C=3cores; 4C=4cores

**J- Cross Section Area/Wire Gauge**

1.5S=1.5mm<sup>2</sup>; 2.5=2.5mm<sup>2</sup>

1.91S(39/0.21)=1.91 mm<sup>2</sup> (39/0.21mm)

24A(7)=24 AWG(7Strand)

24A(16/0.2)=24 AWG(16/0.2mm)

**K- Standard(option)**

530811=BS5308-1 Type1; 530812=BS5308-1 Type2;

530821=BS5308-2 Type1; 530822=BS5308-2 Type2;

**L- Fire Propagation Level(option)**

1=IEC60332-1; 3C=IEC 60332-3C; 3A=IEC60332-3A

**M- Fire Resistant Level(option)**

331=IEC 60331; 6387CWZ=BS 6387 CWZ





## Instrumentation Cables

### Ordering Options:

- 1) **Conductor:** Bare or Tinned Copper
- 2) **Conductor Size:** BS 6360/EN 60228

Size	Class 1	Class 2	Class 5	Class 6
0.5mm <sup>2</sup>	1/0.8mm	7/0.3mm	16/0.2mm	28/0.15mm
0.75mm <sup>2</sup>		7/0.37mm	24/0.2mm	42/0.15mm
1.0mm <sup>2</sup>	1/1.13mm	7/0.44mm	32/0.2mm	56/0.15mm
1.5mm <sup>2</sup>		7/0.53mm	30/0.25mm	84/0.15mm
2.5mm <sup>2</sup>		7/0.67mm	50/0.25mm	140/0.15mm

### 3) Conductor Resistance: BS 6360/EN 60228

Nominal cross-section area mm <sup>2</sup>	Plain copper conductor wires (Ohm/km)		Tinned copper conductor wires (Ohm/km)	
	class 1 and 2	Class 5 and 6	class 1 and 2	Class 5 and 6
0.5mm <sup>2</sup>	36	39	36.7	40.1
0.75mm <sup>2</sup>	24.5	26	24.8	26.7
1.0mm <sup>2</sup>	18.1	19.5	18.2	20
1.5mm <sup>2</sup>	12.1	13.3	12.2	13.7
2.5mm <sup>2</sup>	7.41	7.98	7.56	8.21

- 4) **Insulation:** PVC/XLPE/LSF/LSOH
- 5) **Screening:** Aluminum Tape/Copper Braid
- 6) **Cabling:** Multicore/Multipair/Multitriple
- 7) **Bedding/Sheath Material:** PVC/LSF/LSOH(PVC/LSF/LSHF)
- 8) **Armouring:** Steel Tape Armour/Steel Wire Armour
- 9) **Fire Performance:**
  - IEC 60332-1 (for Flame Retardant PVC)
  - IEC 60332-3C (for Flame Retardant PVC/LSOH Sheath)
  - IEC 61034 Part 1&Part 2 (for LSOH Sheath)
  - IEC 60754 Part 1&Part 2 (5%-15%LSF Sheath & 0.5%LSOH Sheath)
  - Oxygen Index (32%-40% depending on different LSOH compound )
  - Temperature Index (250°C-300°C, depending on different LSOH compound)
  - IEC 60331 (for Fire Resistant Type)



### Multipair instrument cables ESI 09-6 Issue 5 and 6

#### ESI 09-6 Issue 5 Colour Identification

Two-pair cables are cabled in quad formation and colour coded as follows:Blue, Orange, Green and Brown.

Pair No.	a-wire	b-wire	Pair No.	a-wire	b-wire
1	Black	Blue	26	White	Yellow
2	Black	Orange	27	White	Violet
3	Black	Green	28	Blue	Red
4	Black	Brown	29	Blue	Yellow
5	Black	Grey	30	Blue	Violet
6	Blue	White	31	Green	Red
7	Blue	Orange	32	Green	Yellow
8	Blue	Green	33	Green	Violet
9	Blue	Brown	34	Red	Grey
10	Blue	Grey	35	Red	Orange
11	Orange	White	36	Red	Yellow
12	Orange	Green	37	Red	Brown
13	Orange	Brown	38	Red	Violet
14	Orange	Grey	39	Grey	Yellow
15	Green	White	40	Grey	Violet
16	Green	Brown	41	Orange	Yellow
17	Green	Grey	42	Orange	Violet
18	Brown	White	43	Yellow	Brown
19	Brown	Grey	44	Yellow	Violet
20	Grey	White	45	Brown	Violet
21	Black	White	46	Turquoise	Black
22	Black	Red	47	Turquoise	Blue
23	Black	Yellow	48	Turquoise	Red
24	Black	Violet	49	Turquoise	Orange
25	White	Red	50	Turquoise	Yellow



## Instrumentation Cables

### ESI 09-6 Issue 6 Colour Identification

Two-pair cables are cabled in quad formation and colour coded as follows: White, red, blue & orange.

Pair No.	a-wire	b-wire	Pair No.	a-wire	b-wire
1	White	Blue	11	Black	Blue
2	White	Orange	12	Black	Orange
3	White	Green	13	Black	Green
4	White	Brown	14	Black	Brown
5	White	Grey	15	Black	Grey
6	Red	Blue	16	Yellow	Blue
7	Red	Orange	17	Yellow	Orange
8	Red	Green	18	Yellow	Green
9	Red	Brown	19	Yellow	Brown
10	Red	Grey	20	Yellow	Grey

Cables having 40 pairs are produced in 20 pair unit, each unit with pair identification as above. Each core is identified by a number (running from 1 upwards) applied directly to its binder tape or by a separate longitudinal tape applied under a clear binder tape.

### Ordering Code

CCA-BC-DEFGH-IJ-K-LM

**A- Cable Series**

FSN=FIRESCREEN

**B- ScreenType**

US=Unscreen; OS=Overall Screen; IS=Individual Pair Screen;

IOS=Individual Pair Screen+Overall Screen; FRUS=Fire Resistant Unscreen;

FROS=Fire Resistant Overall Screen; FRIS=Fire Resistant Individual Pair Screen;

FRIOS=Fire Resistant Individual Pair Screen+Overall Screen

**C- Rated Voltage**

115=115/300V; 300=300/500V;

450=450/750V; 600=600/1000V

**D- Insulation**

2X=XLPE; Y=PVC; 2Y=PE;

H=LSOH; O2Y=Foam PE



**E- Screening**

ST=Aluminum/Polyester Tape

PIMF=Pair Shielded with Aluminum/Polyester Tape

PIC=Pair Shielded with Copper Screen

**F- Sheath**

Y=PVC; 2Y=PE; H=LSOH

**G- Armouring**

SWA=Steel Wire Armour; STA= Steel Tape Armour; SWB= Steel Wire Braid Armour;

DSTA= Double Steel Tape Armour

**H- Sheath**

Y= PVC; Yu= FR-PVC;

Yv=Reinforced PVC; 2Y= PE;

H=LSHF

**I- No.of cores/Pairs/Triads/Quads**

2C=2cores; 3C=3cores; 4C=4cores

**J- Cross Section Area/Wire Gauge**

1.5S=1.5mm<sup>2</sup>; 2.5=2.5mm<sup>2</sup>

1.91S(39/0.21)=1.91 mm<sup>2</sup> (39/0.21mm)

24A(7)=24 AWG(7Strand)

24A(16/0.2)=24 AWG(16/0.2mm)

**K- Standard(option)**

E965=ESI 09-5 Issue 5; E966=ESI 09-6 Issue 6

**L- Fire Propagation Level(option)**

1=IEC60332-1; 3C=IEC 60332-3C; 3A=IEC60332-3A

**M- Fire Resistant Level(option)**

331=IEC 60331; 6387CWZ=BS 6387 CWZ



## Instrumentation Cables

### Ordering Options:

- 1) **Conductor:** Bare or Tinned Copper
- 2) **Conductor Size:** BS 6360/EN 60228

Size	Class 1	Class 2	Class 5	Class 6
0.5mm <sup>2</sup>	1/0.8mm	7/0.3mm	16/0.2mm	28/0.15mm
0.75mm <sup>2</sup>		7/0.37mm	24/0.2mm	42/0.15mm
1.0mm <sup>2</sup>	1/1.13mm	7/0.44mm	32/0.2mm	56/0.15mm
1.5mm <sup>2</sup>		7/0.53mm	30/0.25mm	84/0.15mm
2.5mm <sup>2</sup>		7/0.67mm	50/0.25mm	140/0.15mm

### 3) Conductor Resistance: BS 6360/EN 60228

Nominal cross-section area mm <sup>2</sup>	Plain copper conductor wires (Ohm/km)		Tinned copper conductor wires (Ohm/km)	
	class 1 and 2	Class 5 and 6	class 1 and 2	Class 5 and 6
0.5mm <sup>2</sup>	36	39	36.7	40.1
0.75mm <sup>2</sup>	24.5	26	24.8	26.7
1.0mm <sup>2</sup>	18.1	19.5	18.2	20
1.5mm <sup>2</sup>	12.1	13.3	12.2	13.7
2.5mm <sup>2</sup>	7.41	7.98	7.56	8.21

- 4) **Insulation:** PVC/XLPE/LSF/LSOH
- 5) **Screening:** Aluminum Tape/Copper Braid
- 6) **Cabling:** Multicore/Multipair/Multitriple
- 7) **Bedding/Sheath Material:** PVC/LSF/LSOH(PVC/LSF/LSHF)
- 8) **Armouring:** Steel Tape Armour/Steel Wire Armour
- 9) **Fire Performance:**
  - IEC 60332-1 (for Flame Retardant PVC)
  - IEC 60332-3C (for Flame Retardant PVC/LSOH Sheath)
  - IEC 61034 Part 1&Part 2 (for LSOH Sheath)
  - IEC 60754 Part 1&Part 2 (5%-15%LSF Sheath & 0.5%LSOH Sheath)
  - Oxygen Index (32%-40% depending on different LSOH compound )
  - Temperature Index (250°C-300°C, depending on different LSOH compound)
  - IEC 60331 (for Fire Resistant Type)



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