

# BS 5308 Part 2 Type 1 - ICAM - PVC Instrumentation Cable



Eland Product Group: I

## APPLICATION

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. BS 5308 cables are designed to form part of an intrinsically safe system and the technical information required to determine their suitability for this application is contained within the datasheet. Part 2 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required. Being BS 5308 Part 2 the insulation material is PVC. The PVC sheathing material has an Oxygen Index above 30% and Hydrogen Chloride Emissions below 15%. Individually and collectively screened pairs are available within the range where further signal security is required.

## CONSTRUCTION

### Conductor

Class 1 solid, Class 2 stranded or Class 5 flexible copper conductor according to BS EN 60228 (previously BS 6360)

### Pairing

Two insulated conductors uniformly twisted together

### Insulation

PVC (Polyvinyl Chloride) Type TI1 according to BS EN 50363

### Shielding

AL/PET (Aluminium/Polyester Tape)

### Drain Wire

Tinned copper

### Sheath

PVC (Polyvinyl Chloride) Type TM1 according to BS EN 50363

## CABLE STANDARDS

BS/PAS 5308, BS EN 60228, BS EN 6234, BS EN 50363, BS EN/IEC 60332-1, BS EN/IEC 60332-3-24



The electrical and dimensional properties of this product are measured by the Technical and Quality Assurance department at the Eland Cables laboratory. Cable performance in respect of conductor resistance, construction quality (workmanship), dimensional consistency, and other parameters are verified to published standards and approved product drawings. Conformance to RoHS (Restriction of the use of Hazardous Substances) is determined and confirmed.

## CHARACTERISTICS

### Voltage Rating (U<sub>o</sub>/U)

300/500V

### Temperature Rating

Fixed: -30°C to +70°C

Flexed: -5°C to +50°C

### Minimum Bending Radius

18 x overall diameter

### Sheath Colour

● Blue ● Black

## DIMENSIONS

### Individually and Collectively Screened

| ELAND PART NO. | NO. OF PAIRS/TRIPLE | NOMINAL GROSS SECTIONAL AREA<br>mm <sup>2</sup> | NOMINAL OVERALL DIAMETER<br>mm |
|----------------|---------------------|---|--------------------------------|
| I0205P2T1ICP** | 2P                  | 0.5   | 10.7                           |
| I0275P2T1ICP** | 2P                  | 0.75  | 11.4                           |
| I0210P2T1ICP** | 2P                  | 1   | 11.3                           |
| I0215P2T1ICP** | 2P                  | 1.5   | 13.1                           |
| I0225P2T1ICP** | 2P                  | 2.5   | 14.5                           |
| I0305P2T1ICP** | 3P                  | 0.5   | 12.1                           |
| I0375P2T1ICP** | 3P                  | 0.75  | 12.8                           |
| I0310P2T1ICP** | 3P                  | 1   | 13.4                           |
| I0315P2T1ICP** | 3P                  | 1.5   | 14.5                           |
| I0325P2T1ICP** | 3P                  | 2.5   | 15.9                           |
| I0505P2T1ICP** | 5P                  | 0.5   | 13.6                           |
| I0575P2T1ICP** | 5P                  | 0.75  | 14.5                           |
| I0510P2T1ICP** | 5P                  | 1   | 14.5                           |
| I0515P2T1ICP** | 5P                  | 1.5   | 16.8                           |
| I0525P2T1ICP** | 5P                  | 2.5   | 18.9                           |
| I1005P2T1ICP** | 10P                 | 0.5   | 19                             |
| I1075P2T1ICP** | 10P                 | 0.75  | 20.4                           |
| I1010P2T1ICP** | 10P                 | 1   | 20.4                           |
| I1015P2T1ICP** | 10P                 | 1.5   | 23.9                           |
| I1025P2T1ICP** | 10P                 | 2.5   | 26.9                           |
| I1505P2T1ICP** | 15P                 | 0.5   | 21.9                           |
| I1575P2T1ICP** | 15P                 | 0.75  | 23.8                           |
| I1510P2T1ICP** | 15P                 | 1   | 23.7                           |
| I1515P2T1ICP** | 15P                 | 1.5   | 27.6                           |
| I1525P2T1ICP** | 15P                 | 2.5   | 31.1                           |
| I2005P2T1ICP** | 20P                 | 0.5   | 24.6                           |
| I2075P2T1ICP** | 20P                 | 0.75  | 26.8                           |
| I2010P2T1ICP** | 20P                 | 1   | 26.7                           |
| I2015P2T1ICP** | 20P                 | 1.5   | 31.1                           |
| I2025P2T1ICP** | 20P                 | 2.5   | 35.3                           |
| I3005P2T1ICP** | 30P                 | 0.5   | 29.2                           |
| I3075P2T1ICP** | 30P                 | 0.75  | 31.5                           |
| I3010P2T1ICP** | 30P                 | 1   | 31.4                           |
| I3015P2T1ICP** | 30P                 | 1.5   | 36.8                           |
| I3025P2T1ICP** | 30P                 | 2.5   | 41.8                           |

P = Pairs

## CONDUCTORS

| NOMINAL GROSS SECTIONAL AREA<br>mm <sup>2</sup> | CONDUCTOR CLASS | MAXIMUM DC RESISTANCE OF CONDUCTOR AT 20°C<br>ohms/km |
|---|-----------------|---|
| 0.5   | 5               | 39  |
| 0.75  | 5               | 26  |
| 1   | 1               | 18.1  |
| 1.5   | 2               | 12.1  |
| 2.5   | 2               | 7.41  |

## ELECTRICAL CHARACTERISTICS

### Individually and Collectively Screened Cables

| NOMINAL GROSS SECTIONAL AREA<br>mm <sup>2</sup> | MUTUAL CAPACITANCE<br>pF/m      |                             | MINIMUM INSULATION RESISTANCE AT 20°C<br>mohms/km | MAXIMUM L/R RATIO<br>μH/ohms |
|---|---------------------------------|-----------------------------|---|------------------------------|
|   | Between Pairs or Adjacent Cores | Between any Core and Screen |   |                              |
| 0.5   | 250                             | 450                         | >25   | 25                           |
| 0.75  | 250                             | 450                         | >25   | 25                           |
| 1   | 250                             | 450                         | >25   | 25                           |
| 1.5   | 250                             | 450                         | >25   | 40                           |
| 2.5   | 250                             | 450                         | >25   | 65                           |

## CORE COLOURS

| PAIR NO. | A WIRE     | B WIRE |
|----------|------------|--------|
| 1        | White      | Blue   |
| 2        | White      | Orange |
| 3        | White      | Green  |
| 4        | White      | Brown  |
| 5        | White      | Grey   |
| 6        | Red        | Blue   |
| 7        | Red        | Orange |
| 8        | Red        | Green  |
| 9        | Red        | Brown  |
| 10       | Red        | Grey   |
| 11       | Black      | Blue   |
| 12       | Black      | Orange |
| 13       | Black      | Green  |
| 14       | Black      | Brown  |
| 15       | Black      | Grey   |
| 16       | Yellow     | Blue   |
| 17       | Yellow     | Orange |
| 18       | Yellow     | Green  |
| 19       | Yellow     | Brown  |
| 20       | Yellow     | Grey   |
| 21       | White/Blue | Blue   |
| 22       | White/Blue | Orange |
| 23       | White/Blue | Green  |
| 24       | White/Blue | Brown  |
| 25       | White/Blue | Grey   |
| 26       | Red/Blue   | Blue   |
| 27       | Red/Blue   | Orange |
| 28       | Red/Blue   | Green  |
| 29       | Red/Blue   | Brown  |
| 30       | Red/Blue   | Grey   |
| 31       | Blue/Black | Blue   |
| 32       | Blue/Black | Orange |
| 33       | Blue/Black | Green  |
| 34       | Blue/Black | Brown  |

| PAIR NO. | A WIRE       | B WIRE |
|----------|--------------|--------|
| 35       | Blue/Black   | Grey   |
| 36       | Yellow/Blue  | Blue   |
| 37       | Yellow/Blue  | Orange |
| 38       | Yellow/Blue  | Green  |
| 39       | Yellow/Blue  | Brown  |
| 40       | Yellow/Blue  | Grey   |
| 41       | White/Orange | Blue   |
| 42       | White/Orange | Orange |
| 43       | White/Orange | Green  |
| 44       | White/Orange | Brown  |
| 45       | White/Orange | Grey   |
| 46       | Orange/Red   | Blue   |
| 47       | Orange/Red   | Orange |
| 48       | Orange/Red   | Green  |
| 49       | Orange/Red   | Brown  |
| 50       | Orange/Red   | Grey   |