

## INSTRUMENTATION CABLES AS PER BS EN 50288-7 (CU/XLPE/IS/OS/PVC/LC/PVC/SWA/PVC)

### APPLICATION

Lead sheath instrumentation cables provide robust mechanical protection and durability, ideal for industrial and commercial applications. These cables ensure reliable transmission of analogue signals in harsh environments, including chemical, petrochemical, oil & gas, power plants, and marine settings. They offer enhanced protection against chemical exposure, vibration, moisture, and extreme temperatures, making them suitable for process control, automated systems, and hazardous areas. The lead sheath also shields against electromagnetic interference, ensuring consistent performance and signal integrity.

### CONSTRUCTION

|                                            |                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor:</b>                          | Stranded (Class 2) Annealed Plain Copper Conductor to BS EN 60228                                                                                                                                                                                                                                  |
| <b>Insulation:</b>                         | Cross linked polyethylene (XLPE)                                                                                                                                                                                                                                                                   |
| <b>Insulation Color:</b>                   | Multi Pair: Black & White with number printed on each cores.<br>Multi Triad: Black, White & Red with number printed on each cores.<br>Other colors are available upon request or as per BS EN 50288-7.                                                                                             |
| <b>Pair / Triad:</b>                       | Uniformly twisted insulated conductors with suitable twists per meter.                                                                                                                                                                                                                             |
| <b>Individual Screen &amp; Drain Wire:</b> | Aluminum backed Mylar tape (25µm) (AL-PET Foil) is applied over each pair / triad with 100% coverage and an overlap of 25% with metal side, in contact with a stranded tinned copper drain wire of size 0.5 mm <sup>2</sup> (Class 2). All pair shields are electrically isolated from each other. |
| <b>Assembly:</b>                           | The required number of screened pairs / triads are assembled together with non-hygroscopic fillers (if required) and wrapped with a binder tape.                                                                                                                                                   |
| <b>Overall Screen &amp; Drain Wire:</b>    | Aluminum backed Mylar tape (25µm) (AL-PET-Foil) is applied over assembly with 100% coverage and an overlap of 25% with metal side in contact with a stranded tinned copper drain wire of size 0.5 mm <sup>2</sup> (class 2).                                                                       |
| <b>Inner Sheath:</b>                       | Extruded Polyvinyl Chloride (PVC) in Black colour.<br>Other colors are available upon request.                                                                                                                                                                                                     |
| <b>Lead Covering:</b>                      | Extruded Lead Alloy Sheath as per BS EN 50307                                                                                                                                                                                                                                                      |
| <b>Bedding:</b>                            | Extruded Polyvinyl Chloride (PVC) in Black colour.<br>Other colors are available upon request.                                                                                                                                                                                                     |
| <b>Armoring:</b>                           | A serving of single layer of round galvanized steel wires is applied as per BS EN 10257-1.                                                                                                                                                                                                         |
| <b>Outer Sheath:</b>                       | Extruded Polyvinyl Chloride (PVC) in Black colour.<br>Other colors are available upon request.                                                                                                                                                                                                     |



**Printing Text on the  
Outer Sheath:**

INSTRUMENTATION CABLE CU/XLPE/IS/OS/PVC/LC/PVC/  
SWA/PVC NO OF PAIRS / TRIADS X 2 / 3 X...MM2 500 V  
BS EN 50288-7 TEKAB YEAR MADE IN UAE LENGTH METER  
MARKING

**TECHNICAL DATA**

|                                                          |                                                                                              |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>Operating Temperature:</b>                            | During Normal Operation - 90°C<br>During Short Circuit Condition - 250°C                     |
| <b>Voltage Rating:</b>                                   | 500V                                                                                         |
| <b>Voltage Withstand:</b>                                | 2000 V a.c. r.m.s. for 1 minutes                                                             |
| <b>Insulation Resistance<br/>MΩ/km:</b>                  | ≥ 1000                                                                                       |
| <b>Mutual Capacitance<br/>nf/km:</b>                     | < 150                                                                                        |
| <b>Inductance to<br/>resistance ratio (L/R)<br/>μH/Ω</b> | < 25 (up to 1mm <sup>2</sup> )<br>< 40 (1.5 mm <sup>2</sup> )<br>< 60 (2.5 mm <sup>2</sup> ) |

\* Solid (Class-1) / Flexible (Class-5), Tinned / Thermocouple conductor can be provided upon request.

\*\* Flame Retardant Cross linked polyethylene (FR-XLPE) can be provided upon request.

\*\*\* Screening: - Copper Tape / CU-PET tape / Braiding & any other drain wire size can be provided upon request.

\*\*\*\* Other special sheath materials are also available with Flame Retardant :- IEC 60332-1-2, IEC 60332-3-22 (CAT A), IEC 60332-3-24 (CAT C), Low Smoke, UV / Sunlight Resistant, Oil Resistant, Anti-Termite, Anti-Rodent.

- Construction in core formation also can be provided upon request.
- 300V or any customized voltage grade rated cables up to 600/1000V can be provided upon request.

| SERIAL NO. | TEKAB CODE  | NO. OF PAIRS (P) / TRIADS (T) X CONDUCTOR SIZE (No. x sq.mm) | NO. OF STRANDS | MINIMUM INSULATION THICKNESS (mm) | APPROX. OVERALL DIAMETER (mm) | APPROX. WEIGHT (kg/km) |
|------------|-------------|--------------------------------------------------------------|----------------|-----------------------------------|-------------------------------|------------------------|
| 1          | XA8A7VLVZ2V | 2P X 0.5                                                     | 7              | 0.44                              | 20                            | 1275                   |
| 2          | XA8A7VLVZ2V | 5P X 0.5                                                     | 7              | 0.44                              | 24                            | 1750                   |
| 3          | XA8A7VLVZ2V | 10P X 0.5                                                    | 7              | 0.44                              | 28                            | 2325                   |
| 4          | XA8A7VLVZ2V | 12P X 0.5                                                    | 7              | 0.44                              | 29                            | 2524                   |
| 5          | XA8A7VLVZ2V | 16P X 0.5                                                    | 7              | 0.44                              | 32                            | 2900                   |
| 6          | XA8A7VLVZ2V | 20P X 0.5                                                    | 7              | 0.44                              | 35.5                          | 3600                   |
| 7          | XA8A7VLVZ2V | 2P X 0.75                                                    | 7              | 0.44                              | 22                            | 1500                   |
| 8          | XA8A7VLVZ2V | 5P X 0.75                                                    | 7              | 0.44                              | 25                            | 1975                   |
| 9          | XA8A7VLVZ2V | 10P X 0.75                                                   | 7              | 0.44                              | 29.5                          | 2575                   |
| 10         | XA8A7VLVZ2V | 12P X 0.75                                                   | 7              | 0.44                              | 31                            | 2800                   |
| 11         | XA8A7VLVZ2V | 16P X 0.75                                                   | 7              | 0.44                              | 35.5                          | 3400                   |
| 12         | XA8A7VLVZ2V | 20P X 0.75                                                   | 7              | 0.44                              | 38                            | 4100                   |
| 13         | XA8A7VLVZ2V | 2P X 1.0                                                     | 7              | 0.44                              | 22.5                          | 1575                   |
| 14         | XA8A7VLVZ2V | 5P X 1.0                                                     | 7              | 0.44                              | 26                            | 2075                   |

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|------------|-------------|--------------------------------------------------------------|----------------|-----------------------------------|-------------------------------|------------------------|
| 15         | XA8A7VLVZ2V | 10P X 1.0                                                    | 7              | 0.44                              | 30.5                          | 2750                   |
| 16         | XA8A7VLVZ2V | 12P X 1.0                                                    | 7              | 0.44                              | 33                            | 3225                   |
| 17         | XA8A7VLVZ2V | 16P X 1.0                                                    | 7              | 0.44                              | 37                            | 3900                   |
| 18         | XA8A7VLVZ2V | 20P X 1.0                                                    | 7              | 0.44                              | 39.5                          | 4450                   |
| 19         | XA8A7VLVZ2V | 2P X 1.5                                                     | 7              | 0.44                              | 23                            | 1700                   |
| 20         | XA8A7VLVZ2V | 5P X 1.5                                                     | 7              | 0.44                              | 27                            | 2275                   |
| 21         | XA8A7VLVZ2V | 10P X 1.5                                                    | 7              | 0.44                              | 33                            | 3250                   |
| 22         | XA8A7VLVZ2V | 12P X 1.5                                                    | 7              | 0.44                              | 36                            | 3700                   |
| 23         | XA8A7VLVZ2V | 16P X 1.5                                                    | 7              | 0.44                              | 39                            | 4400                   |
| 24         | XA8A7VLVZ2V | 20P X 1.5                                                    | 7              | 0.44                              | 43                            | 5175                   |
| 25         | XA8A7VLVZ2V | 2P X 2.5                                                     | 7              | 0.53                              | 26                            | 2025                   |
| 26         | XA8A7VLVZ2V | 5P X 2.5                                                     | 7              | 0.53                              | 31                            | 2725                   |
| 27         | XA8A7VLVZ2V | 10P X 2.5                                                    | 7              | 0.53                              | 38                            | 4200                   |
| 28         | XA8A7VLVZ2V | 12P X 2.5                                                    | 7              | 0.53                              | 41.5                          | 4825                   |
| 29         | XA8A7VLVZ2V | 16P X 2.5                                                    | 7              | 0.53                              | 47                            | 6250                   |
| 30         | XA8A7VLVZ2V | 20P X 2.5                                                    | 7              | 0.53                              | 51.5                          | 7350                   |
| 31         | XA8A7VLVZ2V | 2T X 0.5                                                     | 7              | 0.44                              | 21                            | 1350                   |
| 32         | XA8A7VLVZ2V | 5T X 0.5                                                     | 7              | 0.44                              | 24.5                          | 1875                   |
| 33         | XA8A7VLVZ2V | 10T X 0.5                                                    | 7              | 0.44                              | 29                            | 2525                   |
| 34         | XA8A7VLVZ2V | 12T X 0.5                                                    | 7              | 0.44                              | 30.5                          | 2750                   |
| 35         | XA8A7VLVZ2V | 16T X 0.5                                                    | 7              | 0.44                              | 34                            | 3450                   |
| 36         | XA8A7VLVZ2V | 20T X 0.5                                                    | 7              | 0.44                              | 37                            | 4000                   |
| 37         | XA8A7VLVZ2V | 2T X 0.75                                                    | 7              | 0.44                              | 22.5                          | 1600                   |
| 38         | XA8A7VLVZ2V | 5T X 0.75                                                    | 7              | 0.44                              | 26                            | 2125                   |
| 39         | XA8A7VLVZ2V | 10T X 0.75                                                   | 7              | 0.44                              | 31                            | 2800                   |
| 40         | XA8A7VLVZ2V | 12T X 0.75                                                   | 7              | 0.44                              | 33                            | 3300                   |
| 41         | XA8A7VLVZ2V | 16T X 0.75                                                   | 7              | 0.44                              | 37                            | 4000                   |
| 42         | XA8A7VLVZ2V | 20T X 0.75                                                   | 7              | 0.44                              | 40                            | 4575                   |
| 43         | XA8A7VLVZ2V | 2T X 1.0                                                     | 7              | 0.44                              | 23                            | 1675                   |
| 44         | XA8A7VLVZ2V | 5T X 1.0                                                     | 7              | 0.44                              | 27                            | 2250                   |
| 45         | XA8A7VLVZ2V | 10T X 1.0                                                    | 7              | 0.44                              | 32.5                          | 3225                   |
| 46         | XA8A7VLVZ2V | 12T X 1.0                                                    | 7              | 0.44                              | 35                            | 3625                   |
| 47         | XA8A7VLVZ2V | 16T X 1.0                                                    | 7              | 0.44                              | 38.5                          | 3675                   |
| 48         | XA8A7VLVZ2V | 20T X 1.0                                                    | 7              | 0.44                              | 42                            | 5150                   |
| 49         | XA8A7VLVZ2V | 2T X 1.5                                                     | 7              | 0.44                              | 24                            | 1800                   |
| 50         | XA8A7VLVZ2V | 5T X 1.5                                                     | 7              | 0.44                              | 28.5                          | 2475                   |

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|------------|-------------|--------------------------------------------------------------|----------------|-----------------------------------|-------------------------------|------------------------|
| 51         | XA8A7VLVZ2V | 10T X 1.5                                                    | 7              | 0.44                              | 35                            | 3675                   |
| 52         | XA8A7VLVZ2V | 12T X 1.5                                                    | 7              | 0.44                              | 37                            | 4150                   |
| 53         | XA8A7VLVZ2V | 16T X 1.5                                                    | 7              | 0.44                              | 42                            | 5100                   |
| 54         | XA8A7VLVZ2V | 20T X 1.5                                                    | 7              | 0.44                              | 46.5                          | 5350                   |
| 55         | XA8A7VLVZ2V | 2T X 2.5                                                     | 7              | 0.53                              | 27                            | 2200                   |
| 56         | XA8A7VLVZ2V | 5T X 2.5                                                     | 7              | 0.53                              | 32.5                          | 3200                   |
| 57         | XA8A7VLVZ2V | 10T X 2.5                                                    | 7              | 0.53                              | 40.5                          | 4800                   |
| 58         | XA8A7VLVZ2V | 12T X 2.5                                                    | 7              | 0.53                              | 44.5                          | 5900                   |
| 59         | XA8A7VLVZ2V | 16T X 2.5                                                    | 7              | 0.53                              | 50                            | 7200                   |
| 60         | XA8A7VLVZ2V | 20T X 2.5                                                    | 7              | 0.53                              | 54.5                          | 8550                   |

