

## TECHNOKONTROL IB1-YSL(St)Y-P

### INTRINSICALLY SAFE CABLES



### APPLICATIONS

**TECHNOKONTROL IB1-YSL(St)Y-P** are multipair overall shielded cables, intended for intrinsically safe circuits and explosive conditions zones, designed for operating voltage 0.6/1 kV.

Paired structure decreases mutual influence between signals transmitted along the cable.

The cables are protected by an overall electrostatic shield against external electric interferences.

The cables are designed to offer high flexibility combined with tensile strength.

Sheathing PVC of high oxygen index is UV radiation and weather resistant, is self-extinguishing and flame retardant. The cables pass combustibility test according to PN-EN 60332-3 standard.

The cables are oil-resistant and designed for frequent contact with petroleum products, as in petrol stations and stores, where engine fuels and lubricants are pumped or handled.

The cables are suitable for fixed indoor and outdoor installations.

### CONSTRUCTION

- flexible, multiwire conductors, stranded of bare annealed copper wires (tin-plated on request), meeting requirements of class 2 per PN-EN 60228,
- PVC insulation, identification of pairs:
  - "a" wire – black insulation and white pair number printed on it,
  - "b" wire – white insulation and black pair number printed on it,
- insulated conductors twisted into pairs,
- pairs laid-up in layers,
- cable core wrapped in polyester tape,
- overall electrostatic shield incorporating aluminium-polyester tape and stranded annealed tinned copper drain wire (class 2),
- oil, petrol and UV radiation resistant and self-extinguishing (oxygen index bigger than 29%) PVC cable sheath, blue RAL 5015 according to VDE 0165 6.1.3.2.3.

### AVAILABLE UPON REQUEST

**TECHNOKONTROL IB1-YSL(St)Yv-P** - intrinsically safe cables with enhanced PVC sheath, suitable for direct earth burial.

# **TECHNOKONTROL IB1-YSL(St)Y-P**

## **CHARACTERISTICS**

|                                          |                 |            |             |            |            |            |
|------------------------------------------|-----------------|------------|-------------|------------|------------|------------|
| Conductor cross-section                  | mm <sup>2</sup> | <b>0.5</b> | <b>0.75</b> | <b>1.0</b> | <b>1.5</b> | <b>2.5</b> |
| DC loop resistance at 20°C, maximum      | Ω/km            | 72.0       | 49.0        | 36.2       | 24.2       | 14.82      |
| Mutual capacitance at 1 kHz, approximate | nF/km           | 120        | 120         | 130        | 140        | 150        |

|                                     |            |                             |                                |
|-------------------------------------|------------|-----------------------------|--------------------------------|
| Operating voltage U <sub>0</sub> /U | 0.6/1 kV   | Operating temperature range |                                |
| Voltage test                        | 3.5 kV rms | for fixed installation      | from - 30 to + 80°C            |
| Insulation resistance, minimum      | 20 MΩ·km   | for movable installation    | from - 5 to + 70°C             |
| Inductance, approximate             | 0.7 mH/km  | Minimum bending radius      | 10 x cable diameter            |
|                                     |            | Cable combustibility        | flame retardant                |
|                                     |            | Combustibility tests        | PN-EN 60332-1-2, IEC 60332-1-2 |
|                                     |            | Oil resistance              | PN-EN 60811-404                |

**CE = the cable meets requirements of the low voltage directive 2014/35/EU**

| Product No. | Number of pairs (x 2) x conductor cross-section | Cable outer diameter (appr.) | Copper index | Cable weight (appr.) |
|-------------|-------------------------------------------------|------------------------------|--------------|----------------------|
|             | mm <sup>2</sup>                                 | mm                           | kg/km        | kg/km                |
| 0774 011    | 2 x 2 x 0,5                                     | 10.2                         | 21.6         | 134                  |
| 0774 012    | 3 x 2 x 0,5                                     | 10.7                         | 31.2         | 165                  |
| 0774 013    | 4 x 2 x 0,5                                     | 11.7                         | 40.8         | 188                  |
| 0774 014    | 5 x 2 x 0,5                                     | 12.8                         | 50.4         | 215                  |
| 0774 015    | 6 x 2 x 0,5                                     | 13.8                         | 60.0         | 250                  |
| 0774 016    | 7 x 2 x 0,5                                     | 13.8                         | 69.6         | 260                  |
| 0774 017    | 8 x 2 x 0,5                                     | 14.7                         | 79.2         | 284                  |
| 0774 018    | 10 x 2 x 0,5                                    | 16.6                         | 98.4         | 342                  |
| 0774 019    | 12 x 2 x 0,5                                    | 17.4                         | 117.6        | 385                  |
| 0774 020    | 16 x 2 x 0,5                                    | 19.6                         | 156.0        | 479                  |
| 0774 021    | 18 x 2 x 0,5                                    | 20.6                         | 175.2        | 525                  |
| 0774 022    | 20 x 2 x 0,5                                    | 21.6                         | 194.4        | 570                  |
| 0774 023    | 25 x 2 x 0,5                                    | 24.2                         | 242.4        | 710                  |
| 0774 024    | 30 x 2 x 0,5                                    | 26.2                         | 290.4        | 820                  |
| 0774 025    | 40 x 2 x 0,5                                    | 30.2                         | 386.4        | 1071                 |
| 0774 026    | 50 x 2 x 0,5                                    | 33.3                         | 482.4        | 1291                 |
| 0774 006    | 2 x 2 x 0,75                                    | 10.8                         | 33.6         | 155                  |
| 0774 027    | 3 x 2 x 0,75                                    | 11.4                         | 48.0         | 196                  |
| 0774 028    | 4 x 2 x 0,75                                    | 12.5                         | 62.4         | 226                  |
| 0774 003    | 5 x 2 x 0,75                                    | 13.6                         | 76.8         | 257                  |
| 0774 029    | 6 x 2 x 0,75                                    | 14.8                         | 91.2         | 301                  |
| 0774 030    | 7 x 2 x 0,75                                    | 14.8                         | 105.6        | 314                  |
| 0774 031    | 8 x 2 x 0,75                                    | 15.7                         | 120.0        | 344                  |
| 0774 004    | 10 x 2 x 0,75                                   | 17.8                         | 148.8        | 416                  |
| 0774 009    | 12 x 2 x 0,75                                   | 18.6                         | 177.6        | 469                  |
| 0774 032    | 16 x 2 x 0,75                                   | 21.1                         | 235.2        | 588                  |
| 0774 033    | 20 x 2 x 0,75                                   | 23.6                         | 292.8        | 724                  |
| 0774 002    | 2 x 2 x 1,0                                     | 11.5                         | 43.2         | 182                  |
| 0774 034    | 3 x 2 x 1,0                                     | 12.1                         | 62.4         | 228                  |
| 0774 034    | 4 x 2 x 1,0                                     | 13.2                         | 81.6         | 262                  |

| Product No. | Number of pairs (x 2) x conductor cross-section | Cable outer diameter (appr.) | Copper index | Cable weight (appr.) |
|-------------|-------------------------------------------------|------------------------------|--------------|----------------------|
|             | mm <sup>2</sup>                                 | mm                           | kg/km        | kg/km                |
| 0774 036    | 5 x 2 x 1,0                                     | 14.5                         | 100.8        | 302                  |
| 0774 037    | 6 x 2 x 1,0                                     | 15.7                         | 120.0        | 354                  |
| 0774 038    | 7 x 2 x 1,0                                     | 15.7                         | 139.2        | 372                  |
| 0774 039    | 8 x 2 x 1,0                                     | 16.7                         | 158.4        | 408                  |
| 0774 005    | 10 x 2 x 1,0                                    | 19.0                         | 196.8        | 496                  |
| 0774 001    | 12 x 2 x 1,0                                    | 19.9                         | 235.2        | 562                  |
| 0774 010    | 16 x 2 x 1,0                                    | 22.5                         | 312.0        | 707                  |
| 0774 040    | 20 x 2 x 1,0                                    | 25.2                         | 388.8        | 869                  |
| 0774 041    | 2 x 2 x 1,5                                     | 12.4                         | 64.8         | 223                  |
| 0774 042    | 3 x 2 x 1,5                                     | 13.1                         | 93.6         | 282                  |
| 0774 007    | 4 x 2 x 1,5                                     | 14.3                         | 122.4        | 328                  |
| 0774 043    | 5 x 2 x 1,5                                     | 15.7                         | 151.2        | 379                  |
| 0774 044    | 6 x 2 x 1,5                                     | 17.1                         | 180.0        | 447                  |
| 0774 045    | 7 x 2 x 1,5                                     | 17.1                         | 208.8        | 473                  |
| 0774 046    | 8 x 2 x 1,5                                     | 18.3                         | 237.6        | 522                  |
| 0774 047    | 10 x 2 x 1,5                                    | 20.8                         | 295.2        | 636                  |
| 0774 048    | 12 x 2 x 1,5                                    | 21.7                         | 352.8        | 722                  |
| 0774 049    | 16 x 2 x 1,5                                    | 25.1                         | 468.0        | 935                  |
| 0774 050    | 20 x 2 x 1,5                                    | 27.6                         | 583.2        | 1124                 |
| 0774 051    | 2 x 2 x 2,5                                     | 13.8                         | 103.2        | 290                  |
| 0774 052    | 3 x 2 x 2,5                                     | 14.6                         | 151.2        | 375                  |
| 0774 053    | 4 x 2 x 2,5                                     | 16.1                         | 199.2        | 443                  |
| 0774 054    | 5 x 2 x 2,5                                     | 17.7                         | 247.2        | 515                  |
| 0774 055    | 6 x 2 x 2,5                                     | 19.3                         | 295.2        | 611                  |
| 0774 056    | 7 x 2 x 2,5                                     | 19.3                         | 343.2        | 652                  |
| 0774 057    | 8 x 2 x 2,5                                     | 20.6                         | 391.2        | 721                  |
| 0774 058    | 10 x 2 x 2,5                                    | 23.9                         | 487.2        | 904                  |
| 0774 059    | 12 x 2 x 2,5                                    | 25.0                         | 583.2        | 1029                 |
| 0774 060    | 16 x 2 x 2,5                                    | 28.7                         | 775.2        | 1334                 |
| 0774 061    | 20 x 2 x 2,5                                    | 31.7                         | 967.2        | 1613                 |

Other cross-sections and pair counts available on request.  
**TECHNOKABEL S.A. reserves the right to change specifications without prior notice.**