

## YnKGSŁYżo-P; YnKGSŁYżo-T

### MINING CONTROL CABLES



### APPLICATIONS

**YnKGSŁYżo-P** (multipair) and **YnKGSŁYżo-T** (multitriples) are mining control cables intended for control, communication, measuring and monitoring systems in mines.

Cables can be applied in:

- opencast and underground mines, except explosive condition zones.
- underground mines in their non-methane and methane fields in areas of „a” degree explosion hazard.
- underground mines in workings of class A coal dust explosion hazard.
- intrinsically safe circuits in opencast and underground mines in explosion hazardous areas.
- intrinsically safe circuits in underground mines in areas classified as „a”, „b”, or „c” degree explosion hazard.

Cables can not be used for power supplying in power engineering installations.

Paired or tripled structure decreases mutual influence between signals transmitted along the cable and reduces influence of outer sources of interference.

Cables have positive **Technical Opinion No. 05/53** regarding application in underground mines and **Certificate No. 05/53/A1/2** issued by **TI EMAG Institute**.

### CONSTRUCTION

- flexible, multiwire conductors, stranded of bare annealed copper wires (tin-plated on request), meeting requirements of class 5 per PN-EN 60228,
- PVC insulation, identification colour code:
  - pairs – black and brown insulation and white pair number printed on it,
  - triples – black, brown and blue insulation and white triple number printed on it,
- insulated conductors twisted into pairs or triples,
- pairs or triples laid-up in layers into a cable core, green-yellow protective conductor located in the outer layer, cables are made of 2, 3, 4, 5, 7, 8, 10, 12, 14, 15, 16, 18, 19, 21, 24, 25, 28, 30, 40 and 50 pairs or triples,
- cable core wrapped in polyester tape,
- special (oxygen index bigger than 29%) PVC cable sheath, black (RAL 9005) or blue (RAL 5015 – for intrinsically safe circuits), other colors also available.

### AVAILABLE UPON REQUEST

**YnKGSŁXżo-P, YnKGSŁXżo-T** - polyethylene insulated cables (X) of low capacitance, designed to transmit signals over long distances. Cables are designed for operating voltage 300/300 V. Cable sheath made of special self-extinguishing and flame retardant PVC (Yn).

**XnKGSŁXżo-P, XnKGSŁXżo-T** - halogen free cables of reduced combustibility, sheathed with special halogen free material (Xn), applied when higher safety in case of fire is required. The cables are flame retardant, their smoke emission in fire is low and released gases are not corrosive. Cables are designed for operating voltage 300/300 V.

## YnKGSlyżo-P; YnKGSlyżo-T

### 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 conductor resistance at 20°C, maximum | Ω/km            | 78.0           | 52.0        | 39.0           | 26.6       | 16.0            |
| Operating voltage U <sub>o</sub> /U      | V               | <b>300/300</b> |             | <b>300/500</b> |            | <b>600/1000</b> |
| Voltage test                             | V rms           | 1500           |             | 3000           |            | 3500            |
| Insulation resistance, minimum           | MΩ·km           | 20             |             | 20             |            | 100             |

|                                                                       |                                           |                        |                                                                             |
|-----------------------------------------------------------------------|-------------------------------------------|------------------------|-----------------------------------------------------------------------------|
| Inductance, approximate                                               | 0.7 mH/km                                 | Minimum bending radius | 10 x cable diameter                                                         |
| Conductor temperature limit<br>in work conditions<br>in short-circuit | from - 30 to + 70°C<br>from - 5 to + 70°C | Cable combustibility   | flame retardant                                                             |
|                                                                       |                                           | Combustibility tests   | PN-EN 60332-1-2, IEC 60332-1-2<br>PN-EN 60332-3-24, IEC 60332-3-24 (cat. C) |
|                                                                       |                                           | Reference standards    | WT-TK-24                                                                    |

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

| Product No. | Number of pairs (x 2) x<br>conductor cross-<br>section | Cable<br>outer<br>diameter<br>(appr.) | Copper<br>index | Cable<br>weight<br>(appr.) |
|-------------|--------------------------------------------------------|---------------------------------------|-----------------|----------------------------|
| 300/300 V   | mm <sup>2</sup>                                        | mm                                    | kg/km           | kg/km                      |
| 1741 001    | 2 x 2 x 0,75 + 0,75                                    | 9.7                                   | 36              | 109                        |
| 1741 002    | 4 x 2 x 0,75 + 0,75                                    | 11.1                                  | 65              | 160                        |
| 1741 003    | 7 x 2 x 0,75 + 0,75                                    | 13.1                                  | 108             | 235                        |
| 1741 004    | 12 x 2 x 0,75 + 0,75                                   | 16.4                                  | 180             | 360                        |
| 1741 005    | 16 x 2 x 0,75 + 0,75                                   | 18.9                                  | 238             | 475                        |
| 1741 006    | 18 x 2 x 0,75 + 0,75                                   | 19.8                                  | 266             | 525                        |
| 1741 007    | 2 x 2 x 1 + 1                                          | 10.0                                  | 48              | 124                        |
| 1741 008    | 4 x 2 x 1 + 1                                          | 11.5                                  | 86              | 186                        |
| 1741 009    | 7 x 2 x 1 + 1                                          | 13.6                                  | 144             | 280                        |
| 1741 010    | 12 x 2 x 1 + 1                                         | 17.1                                  | 240             | 430                        |

| Product No. | Number of pairs (x 2) x<br>conductor cross-<br>section | Cable<br>outer<br>diameter<br>(appr.) | Copper<br>index | Cable<br>weight<br>(appr.) |
|-------------|--------------------------------------------------------|---------------------------------------|-----------------|----------------------------|
| 300/300 V   | mm <sup>2</sup>                                        | mm                                    | kg/km           | kg/km                      |
| 1741 011    | 16 x 2 x 1 + 1                                         | 19.7                                  | 317             | 565                        |
| 1741 012    | 2 x 2 x 1,5 + 1,5                                      | 11.7                                  | 72              | 167                        |
| 1741 013    | 4 x 2 x 1,5 + 1,5                                      | 13.6                                  | 130             | 255                        |
| 1741 014    | 7 x 2 x 1,5 + 1,5                                      | 16.2                                  | 216             | 390                        |
| 1741 015    | 12 x 2 x 1,5 + 1,5                                     | 20.9                                  | 360             | 625                        |
| 1741 016    | 2 x 2 x 2,5 + 2,5                                      | 13.1                                  | 120             | 230                        |
| 1741 017    | 4 x 2 x 2,5 + 2,5                                      | 15.2                                  | 216             | 360                        |
| 1741 018    | 7 x 2 x 2,5 + 2,5                                      | 18.6                                  | 360             | 575                        |
| 1741 019    | 12 x 2 x 2,5 + 2,5                                     | 24.0                                  | 600             | 930                        |

| Product No. | Number of pairs (x 2) x<br>conductor cross-<br>section | Cable<br>outer<br>diameter<br>(appr.) | Copper<br>index | Cable<br>weight<br>(appr.) |
|-------------|--------------------------------------------------------|---------------------------------------|-----------------|----------------------------|
| 300/500 V   | mm <sup>2</sup>                                        | mm                                    | kg/km           | kg/km                      |
| 1742 001    | 2 x 2 x 0,75 + 0,75                                    | 11.1                                  | 36              | 129                        |
| 1742 002    | 4 x 2 x 0,75 + 0,75                                    | 12.7                                  | 65              | 189                        |
| 1742 003    | 7 x 2 x 0,75 + 0,75                                    | 15.1                                  | 108             | 280                        |
| 1742 004    | 12 x 2 x 0,75 + 0,75                                   | 19.5                                  | 180             | 450                        |
| 1742 005    | 16 x 2 x 0,75 + 0,75                                   | 22.0                                  | 238             | 565                        |
| 1742 006    | 18 x 2 x 0,75 + 0,75                                   | 23.2                                  | 266             | 625                        |
| 1742 007    | 2 x 2 x 1 + 1                                          | 11.4                                  | 48              | 144                        |
| 1742 008    | 4 x 2 x 1 + 1                                          | 13.2                                  | 86              | 220                        |
| 1742 009    | 7 x 2 x 1 + 1                                          | 15.7                                  | 144             | 325                        |
| 1742 010    | 12 x 2 x 1 + 1                                         | 20.2                                  | 240             | 520                        |

| Product No. | Number of pairs (x 2) x<br>conductor cross-<br>section | Cable<br>outer<br>diameter<br>(appr.) | Copper<br>index | Cable<br>weight<br>(appr.) |
|-------------|--------------------------------------------------------|---------------------------------------|-----------------|----------------------------|
| 300/500 V   | mm <sup>2</sup>                                        | mm                                    | kg/km           | kg/km                      |
| 1742 011    | 16 x 2 x 1 + 1                                         | 22.8                                  | 317             | 660                        |
| 1742 012    | 2 x 2 x 1,5 + 1,5                                      | 12.4                                  | 72              | 178                        |
| 1742 013    | 4 x 2 x 1,5 + 1,5                                      | 14.4                                  | 130             | 275                        |
| 1742 014    | 7 x 2 x 1,5 + 1,5                                      | 17.2                                  | 216             | 415                        |
| 1742 015    | 12 x 2 x 1,5 + 1,5                                     | 22.2                                  | 360             | 670                        |
| 1742 016    | 2 x 2 x 2,5 + 2,5                                      | 13.8                                  | 120             | 240                        |
| 1742 017    | 4 x 2 x 2,5 + 2,5                                      | 16.0                                  | 216             | 380                        |
| 1742 018    | 7 x 2 x 2,5 + 2,5                                      | 19.6                                  | 360             | 605                        |
| 1742 019    | 12 x 2 x 2,5 + 2,5                                     | 25.3                                  | 600             | 975                        |

| Product No. | Number of pairs (x 2) x<br>conductor cross-<br>section | Cable<br>outer<br>diameter<br>(appr.) | Copper<br>index | Cable<br>weight<br>(appr.) |
|-------------|--------------------------------------------------------|---------------------------------------|-----------------|----------------------------|
| 0,6/1 kV    | mm <sup>2</sup>                                        | mm                                    | kg/km           | kg/km                      |
| 1743 003    | 2 x 2 x 0,75 + 0,75                                    | 12.4                                  | 36              | 150                        |
| 1743 004    | 4 x 2 x 0,75 + 0,75                                    | 14.4                                  | 65              | 225                        |
| 1743 005    | 7 x 2 x 0,75 + 0,75                                    | 17.2                                  | 108             | 330                        |
| 1743 006    | 12 x 2 x 0,75 + 0,75                                   | 22.2                                  | 180             | 530                        |
| 1743 007    | 16 x 2 x 0,75 + 0,75                                   | 25.5                                  | 238             | 695                        |
| 1743 008    | 18 x 2 x 0,75 + 0,75                                   | 26.9                                  | 266             | 765                        |
| 1743 009    | 2 x 2 x 1 + 1                                          | 12.8                                  | 48              | 166                        |
| 1743 010    | 4 x 2 x 1 + 1                                          | 14.8                                  | 86              | 250                        |
| 1743 011    | 7 x 2 x 1 + 1                                          | 17.7                                  | 144             | 375                        |
| 1743 012    | 12 x 2 x 1 + 1                                         | 22.9                                  | 240             | 605                        |

| Product No. | Number of pairs (x 2) x<br>conductor cross-<br>section | Cable<br>outer<br>diameter<br>(appr.) | Copper<br>index | Cable<br>weight<br>(appr.) |
|-------------|--------------------------------------------------------|---------------------------------------|-----------------|----------------------------|
| 0,6/1 kV    | mm <sup>2</sup>                                        | mm                                    | kg/km           | kg/km                      |
| 1743 013    | 16 x 2 x 1 + 1                                         | 26.3                                  | 317             | 790                        |
| 1743 001    | 2 x 2 x 1,5 + 1,5                                      | 13.8                                  | 72              | 205                        |
| 1743 002    | 4 x 2 x 1,5 + 1,5                                      | 16.0                                  | 130             | 310                        |
| 1743 014    | 7 x 2 x 1,5 + 1,5                                      | 19.6                                  | 216             | 490                        |
| 1743 015    | 12 x 2 x 1,5 + 1,5                                     | 25.3                                  | 360             | 780                        |
| 1743 016    | 2 x 2 x 2,5 + 2,5                                      | 15.1                                  | 120             | 265                        |
| 1743 017    | 4 x 2 x 2,5 + 2,5                                      | 17.7                                  | 216             | 420                        |
| 1743 018    | 7 x 2 x 2,5 + 2,5                                      | 21.7                                  | 360             | 665                        |
| 1743 019    | 12 x 2 x 2,5 + 2,5                                     | 28.0                                  | 600             | 1080                       |

Other cross-sections and conductor counts available on request.  
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