

## MAIN APPLICATION

Flexible H.V. reeling combined power with or without data transmission cables for use on connecting movable parts of machine tools and any material handling equipment (i.e. Stacker/reclaimer, ship to shore crane, container crane, also suitable for festoon system).

Suitable for any energy supply on cable reels systems associated from mechanical stresses, frequent bending operation (IN ONE PLANE ONLY) in movement with medium acceleration.



## CONSTRUCTION

|                              |                                                                                                                                                                                                 |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor:</b>            | Tinned copper conductor, flexible cl.5 IEC 60228<br>Specially designed for mobile application                                                                                                   |
| <b>Insulation:</b>           | Micro filtered HEPR rubber compound better than 3GI3<br>New specially developed compound with improved electrical and mechanical characteristics                                                |
| <b>Cores identification:</b> | Main cores: natural colour with black semiconductive layer. Earth core:<br>- of the same size of main conductor identified by yellow/green colour of insulation<br>- splitted on the main cores |
| <b>Field control:</b>        | - Conductor screen: semiconductive layer<br>- Insulation screen: semiconductive layer of special compound<br>Applied with insulation                                                            |
| <b>Identification:</b>       | Printed numbers on semiconductor layer                                                                                                                                                          |
| <b>Metallic screen:</b>      | Tinned copper wire braid on phase cores                                                                                                                                                         |
| <b>Cores arrangement:</b>    | Parallel<br>Fiber optic module (if any) in the centre                                                                                                                                           |
| <b>Separation (if any):</b>  | Tape(s)                                                                                                                                                                                         |
| <b>Outer sheath:</b>         | Red polychloroprene based compound<br>UV resistant, oil and chemical resistant better then 5GM3 compound                                                                                        |
| <b>Marking:</b>              | U.T.V. CAVI manufactured BY PALAZZO - PANZERFLAT-ELX rated voltage $nc \times$ cross section year of manufacturing                                                                              |

## PARAMETERS

|                                   |                                                                                                                                                                 |                                                                                                                |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>ELECTRICAL</b>                 | Rated voltage                                                                                                                                                   | $U_0/U = 1,8/3$ kV to 6/10 kV                                                                                  |
|                                   | Maximum permissible operating voltage in AC systems<br>AC test voltage over 5 minutes                                                                           | $U_m = 3,6$ kV to 12 kV<br>6 kV to 11 kV<br>according to VDE 0250 part 813<br>According to DIN VDE 0298 part 4 |
| <b>DATA TRANSMISSION (IF ANY)</b> | Current Carrying Capacity                                                                                                                                       |                                                                                                                |
|                                   | Fibre-optics for absolute immunity from electrical interferences.<br>Main type: graded index 62,5/125<br>Available also graded index 50/125 and monomode E9/125 | 6, 12, 18 fibre-optics<br>In a structure composed by 6 loose tubes (1, 2 or 3 fibres per tube)                 |
| <b>THERMAL</b>                    | Fully flexible operation                                                                                                                                        | - 30 °C                                                                                                        |
|                                   | Fixed installation                                                                                                                                              | - 40 °C                                                                                                        |
|                                   | Maximum permissible operating temperature of the conductor                                                                                                      | 90 °C                                                                                                          |
|                                   | Short-circuit temperature of the conductor                                                                                                                      | 250 °C                                                                                                         |
| <b>MECHANICAL</b>                 | Tensile load                                                                                                                                                    | Up to 15 N/mm <sup>2</sup>                                                                                     |
|                                   | Minimum bending radii                                                                                                                                           | According to DIN VDE 0298 part 3                                                                               |
|                                   | Reeling operation                                                                                                                                               | No restriction. Consult the manufacturer if speed exceeds 180 m/min                                            |
| <b>CHEMICAL</b>                   | Resistance to oil                                                                                                                                               | According to VDE / IEC standard                                                                                |
|                                   | Weather resistance                                                                                                                                              | Unrestricted use outdoor and indoor, UV resistant, moisture resistant.                                         |



### PANZERFLAT-ELX

**3.6 ÷ 12/20 kV**

with or without integrated OPTICAL FIBRES - (N)TMFLCGEWÖU H.V. reeling cable 3.6 to 20 kV

**TABLE 1 - PANZERFLAT-ELX 3.6 ÷ 12/20 kV - (N)TMFLCGEWÖU**

MEDIUM VOLTAGE REELING AND FESTOONING

| N. OF CORES<br>AND NOMINAL<br>SECTION<br>N·MM <sup>2</sup> | MAIN CONDUCTOR                     |                  | EARTH CONDUCTOR                  |                                                        | OVERALL DIMENSION |         | CABLE<br>WEIGHT<br>APPROX.<br>KG/KM | PERMISSIBLE<br>TENSILE FORCE<br>MAXIMUM<br>N | CURRENT CARRYING CAPACITY |                     | SHORT CIRCUIT<br>CURRENT<br>80 ° TO 200 °C<br>KA-1 SEC. |                               |
|------------------------------------------------------------|------------------------------------|------------------|----------------------------------|--------------------------------------------------------|-------------------|---------|-------------------------------------|----------------------------------------------|---------------------------|---------------------|---------------------------------------------------------|-------------------------------|
|                                                            | D.C. RESIST.<br>AT 20 °C<br>OHM/KM | NOM. DIAM.<br>MM | SINGLE COND.<br>NOM. DIAM.<br>MM | SPLITTED IN 3 BRAIDS<br>NOM. DIAM.<br>OVER BRAID<br>MM | Nom.              | Max.    |                                     |                                              | AT 30 °C*                 | LAI D STRAIGHT<br>A |                                                         | MONOSPICAL<br>OR 1 LAYER<br>A |
| <b>6/10 kV</b>                                             |                                    |                  |                                  |                                                        |                   |         |                                     |                                              |                           |                     |                                                         |                               |
| 3x25+3x25/3E                                               | 0,565                              | 8,0              | N.A.                             | 17,5                                                   | 26X65             | 28X67   | 3.100                               | 1.575                                        | 162                       | 79                  | 4,5                                                     |                               |
| 3x35+3x25/3E                                               | 0,393                              | 9,3              | N.A.                             | 19,0                                                   | 28x69             | 30x71   | 3.650                               | 2.250                                        | 202                       | 99                  | 6,4                                                     |                               |
| 4x35                                                       | 0,565                              | 8,0              | 8,0                              | N.A.                                                   | 26,5X80,5         | 28,5X83 | 3.870                               | 2.100                                        | 162                       | 79                  | 4,5                                                     |                               |
| 3x35+3x25/3E+0F                                            | 0,565                              | 8,0              | N.A.                             | 17,5                                                   | 26X76             | 28X78   | 3.490                               | 1.575                                        | 162                       | 79                  | 4,5                                                     |                               |
| 3x50+3x25/3E+0F                                            | 0,393                              | 9,3              | N.A.                             | 19,0                                                   | 28x80             | 30x82   | 4.050                               | 2.250                                        | 202                       | 99                  | 6,4                                                     |                               |
| 4X35+0F                                                    | 0,565                              | 8,0              | 8,0                              | 17,5                                                   | 26X90             | 28X93   | 4.200                               | 2.100                                        | 162                       | 79                  | 4,5                                                     |                               |
| 4X50+0F                                                    | 0,393                              | 9,3              | 9,3                              | N.A.                                                   | 27x94             | 29X96,5 | 4.800                               | 3.000                                        | 202                       | 99                  | 6,4                                                     |                               |
| <b>8,7/15 kV</b>                                           |                                    |                  |                                  |                                                        |                   |         |                                     |                                              |                           |                     |                                                         |                               |
| 3x35+3x25/3                                                | 0,565                              | 8,0              | N.A.                             | 19,0                                                   | 26X79             | 28X81   | 3.560                               | 1.575                                        | 172                       | 84                  | 4,5                                                     |                               |
| 3x50+3x25/3                                                | 0,565                              | 8,0              | 8,0                              | N.A.                                                   | 27X94             | 29x96,5 | 4.500                               | 2.100                                        | 172                       | 84                  | 4,5                                                     |                               |

Note: Design according to customer's requirements.

\*For fibre-optics parameters please refer to page 20