

**UNITRONIC® LAN 200 U/UTP Cat. 5e LSZH  
4x2xAWG 24/1**
**DB2170185**  
 valid from: 09.02.2012

## Application

Data cable for transmission of digital and analog signals up to 200 MHz. The cable is designed for horizontal cablings sub-systems as connection between a floor distribution and the telecommunication outlets (TO's). According to TIA/EIA-568-A, ISO/IEC 11801 2<sup>nd</sup> edition, EN 50173, EN 50288-3-1, IEC 61156-5. For application in LANs like IEEE 802.3: 10Base-T, 100Base-T, 1000Base-T; FDDI; ISDN; ATM.

## Design

|                          |  |
|--------------------------|--|
| Conductor                | bare copper AWG 24/1, massive  |
| Insulation               | PE, ca. 0.96 mm core Ø   |
| Core identification code | acc. to IEC 708-1  |
| Stranding                | 4 pairs, stranded to bundle  |
| Outer sheath             | halogen free compound (FRNC), grey similar to RAL 7035,<br>outer Ø: ca. 5.4 mm |

## Electrical properties at 20° C

|                          |                                 |
|--------------------------|---------------------------------|
| Resistance (loop)        | max. 190 Ω/km, acc. to VDE 0812 |
| Insulation resistance    | min. 5 GΩxkm                    |
| Mutual capacitance       | nom. 50 nF/km                   |
| Characteristic impedance | 100 Ω ±5 Ω<br>(at 100 MHz)      |
| Velocity of propagation  | ca. 0.67 c                      |
| Signal propagation time  | <510 ns/100m                    |
| Delay difference         | <20 ns/100m                     |
| Test voltage             | 700 V (AC)                      |

## Transmission properties

| f [MHz]      | Attenuation<br>nom. [dB/100m] | NEXT nom. [dB] | ACR nom.<br>[dB/100m] | ELFEXT nom.<br>[dB/100m] | RL nom. [dB] |
|--------------|-------------------------------|----------------|-----------------------|--------------------------|--------------|
| <b>1</b>     | 1.8                           | 80             | 78.2                  | 65                       | 23           |
| <b>4</b>     | 3.7                           | 75             | 71.3                  | 56                       | 27           |
| <b>10</b>    | 5.9                           | 70             | 64.1                  | 45                       | 30           |
| <b>16</b>    | 7.4                           | 68             | 60.6                  | 41                       | 30           |
| <b>20</b>    | 8.3                           | 65             | 56.7                  | 39                       | 30           |
| <b>31.25</b> | 10.3                          | 60             | 49.7                  | 35                       | 30           |
| <b>62.5</b>  | 14.4                          | 56             | 41.6                  | 30                       | 30           |
| <b>100</b>   | 19.2                          | 52             | 32.8                  | 25                       | 28           |
| <b>155</b>   | 22.1                          | 47             | 24.9                  | 23                       | 26           |
| <b>200</b>   | 24.8                          | 44             | 20.2                  | 21                       | 24           |

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### Mechanical and thermal properties

|                               |   |
|-------------------------------|---|
| Minimum bending radius        | during installation: 8 x cable Ø<br>static: 4 x cable Ø   |
| Permissible temperature range | during installation: 0° C up to +50° C<br>static: -20° C up to +60° C   |
| Flame propagation             | flame retardant acc. to IEC 60332-3-24, IEC 60332-1-2   |
| Smoke gas test                | acc. to EN 50267-2-1/ EN 50267-2-2, IEC 60754-1/ IEC 60754-2,<br>IEC 61034/EN 61034                             |
| General requirements          | Dangerous and forbidden substances acc. to RoHS directive (2002/95/EG) are<br>not allowed to the manufacturing. |