

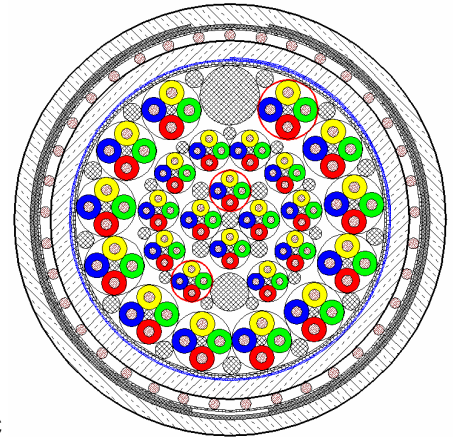


## AJ-02YSTF(L)2YDB2Y STI LG n x 4 x 1.4 / m x 4 x 0.9 mm and n x 4 x 0.9 mm

### LONGDRAK® - Long-distance cable with protection against interferences

**Preferred** types according to specification DB Telematik TNP 02/05, deviating dimensions only based on

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Changes reserved according to technical progress.



**Principle drawing**  
AJ-02YSTF(L)2YDB2Y  
12x4x1,4/14x4x0,9 STI LG r<sub>k</sub> C

### Application

Telecommunication cable (long distance), star quad twisted, used for telecommunication and data transmission.

### Colour Coding, Marking

In quad	a-core	b-core	The counting quad in each layer (including centre quad)
Pair 1	yellow	red	is marked with a red open helix.
Pair 2	green	blue	

### Construction

1) AJ-02YSTF(L)2YDB2Y	
Conductor	copper, solid, 0.9 or 0.9 and 1.4 mm in combination, soft annealed
Insulation	foam-skin-PE (02YS)
Twisting	star quads twisted in concentric layers
Pilot cores	copper, solid, 0.5 mm, perforated, two pilot cores diametrical positioned
Filling	interstices filled with water swellable material, dry filling
Cable core wrapping	one or more layers of water swellable material with overlap
Moisture barrier	laminated sheath formed by an aluminium tape (0.15 mm thick) coated on at least one side with copolymer, and bonded with
Inner sheath	PE (2Y), black
Screen	concentric, of copper wires 0.9, 1.2, 1.4 or 1.8 mm, depending from required reduction factor
Armouring	two layers of galvanised steel tape 0.5 or 0.8 mm, depending from required reduction factor
Outer sheath	PE (2Y), black



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### Mechanical and Thermal Properties

Temperature range	during operation	- 30°C to + 70°C
	during installation	- 5°C to + 50°C
Admissible bending radius		10 x outer cable diameter

### Electrical Properties

at 20°C ± 5°C

Conductor diameter	mm	0.9	1.4
Conductor loop resistance	Ω/km	≤ 56.6	≤ 23.4
Insulation resistance	GΩxkm	≥ 10	
Mutual capacitance at 800 Hz	nF/km	≤ 34	≤ 36
Capacitance unbalance at 800 Hz			
$k_1$	pF/km	≤ 400	
$k_{9-12}$	pF/km	≤ 400	
$e_{a1/2}$	pF/km	≤ 1650	
Test voltage at 50 Hz			
conductor/conductor	$V_{eff}$	500	
conductor/screen	$V_{eff}$	2000	
Attenuation at 800 Hz	dB/km	0.62	≤ 0.4



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### Additional Properties

Dimension	Outer diameter	Cable weight net	Standard supply length	Drum size	Transport weight gross	Copper content	Tensile strength max.	Fire load	r <sub>k</sub> -row
n / m	mm	kg/km	m	KTG	kg/drum	kg/km	N	MJ/m	
<b>AJ-02YSTF(L)2YDB2Y n x 4 x 1,4 / m x 4 x 0,9 STI LG</b>									
<b>1x/7x *)</b>	<b>34,0</b>	<b>1380</b>	<b>1000</b>	<b>201</b>	<b>1930</b>	<b>410</b>	<b>1160</b>	<b>19</b>	<b>A</b>
<b>1x/7x *)</b>	<b>35,0</b>	<b>1580</b>	<b>1000</b>	<b>201</b>	<b>2130</b>	<b>561</b>	<b>1150</b>	<b>19</b>	<b>B</b>
<b>1x/7x *)</b>	<b>36,0</b>	<b>2220</b>	<b>1000</b>	<b>221</b>	<b>2930</b>	<b>783</b>	<b>1130</b>	<b>20</b>	<b>C</b>
<b>2x/11x *)</b>	<b>42,0</b>	<b>1920</b>	<b>500</b>	<b>181</b>	<b>1340</b>	<b>624</b>	<b>1790</b>	<b>26</b>	<b>A</b>
<b>2x/11x *)</b>	<b>42,0</b>	<b>2150</b>	<b>500</b>	<b>181</b>	<b>1455</b>	<b>815</b>	<b>1790</b>	<b>26</b>	<b>B</b>
<b>2x/11x *)</b>	<b>45,0</b>	<b>3200</b>	<b>500</b>	<b>201</b>	<b>2150</b>	<b>1324</b>	<b>1730</b>	<b>27</b>	<b>C</b>
<b>3x/7x</b>	<b>45,0</b>	<b>3220</b>	<b>1000</b>	<b>250</b>	<b>4095</b>	<b>1284</b>	<b>1560</b>	<b>28</b>	<b>C</b>
<b>3x/12x *)</b>	<b>42,0</b>	<b>2060</b>	<b>500</b>	<b>181</b>	<b>1410</b>	<b>724</b>	<b>2180</b>	<b>28</b>	<b>A</b>
<b>3x/12x *)</b>	<b>43,0</b>	<b>2290</b>	<b>500</b>	<b>201</b>	<b>1695</b>	<b>902</b>	<b>2150</b>	<b>28</b>	<b>B</b>
<b>3x/12x *)</b>	<b>45,0</b>	<b>3340</b>	<b>500</b>	<b>201</b>	<b>2220</b>	<b>1411</b>	<b>2100</b>	<b>28</b>	<b>C</b>
<b>3x/30x *)</b>	<b>54,0</b>	<b>3060</b>	<b>500</b>	<b>221</b>	<b>2240</b>	<b>1182</b>	<b>3690</b>	<b>43</b>	<b>A</b>
<b>3x/30x *)</b>	<b>55,0</b>	<b>3450</b>	<b>500</b>	<b>221</b>	<b>2435</b>	<b>1507</b>	<b>3650</b>	<b>43</b>	<b>B</b>
<b>3x/30x *)</b>	<b>57,0</b>	<b>4650</b>	<b>500</b>	<b>221</b>	<b>3035</b>	<b>2021</b>	<b>3550</b>	<b>44</b>	<b>C</b>
<b>4x/13x *)</b>	<b>45,0</b>	<b>2300</b>	<b>500</b>	<b>201</b>	<b>1700</b>	<b>823</b>	<b>2480</b>	<b>32</b>	<b>A</b>
<b>4x/13x *)</b>	<b>46,0</b>	<b>2520</b>	<b>500</b>	<b>201</b>	<b>1810</b>	<b>989</b>	<b>2450</b>	<b>32</b>	<b>B</b>
<b>4x/13x *)</b>	<b>48,0</b>	<b>3620</b>	<b>500</b>	<b>221</b>	<b>2520</b>	<b>1498</b>	<b>2390</b>	<b>33</b>	<b>C</b>
<b>5x/16x *)</b>	<b>48,0</b>	<b>2580</b>	<b>500</b>	<b>221</b>	<b>2000</b>	<b>974</b>	<b>2960</b>	<b>36</b>	<b>A</b>
<b>5x/16x *)</b>	<b>48,0</b>	<b>2850</b>	<b>500</b>	<b>221</b>	<b>2135</b>	<b>1194</b>	<b>2960</b>	<b>36</b>	<b>B</b>
<b>5x/16x *)</b>	<b>51,0</b>	<b>3970</b>	<b>500</b>	<b>221</b>	<b>2695</b>	<b>1686</b>	<b>2860</b>	<b>36</b>	<b>C</b>
<b>8x/4x</b>	<b>44,0</b>	<b>2230</b>	<b>500</b>	<b>201</b>	<b>1665</b>	<b>815</b>	<b>2580</b>	<b>30</b>	<b>A</b>
<b>8x/4x</b>	<b>45,0</b>	<b>2520</b>	<b>500</b>	<b>201</b>	<b>1810</b>	<b>1063</b>	<b>2550</b>	<b>30</b>	<b>B</b>
<b>8x/4x</b>	<b>47,0</b>	<b>3270</b>	<b>500</b>	<b>201</b>	<b>2185</b>	<b>1245</b>	<b>2490</b>	<b>30</b>	<b>C</b>
<b>10x/8x</b>	<b>48,0</b>	<b>2900</b>	<b>500</b>	<b>221</b>	<b>2160</b>	<b>1254</b>	<b>3400</b>	<b>36</b>	<b>B</b>
<b>11x/7x</b>	<b>50,0</b>	<b>2790</b>	<b>500</b>	<b>221</b>	<b>2105</b>	<b>1089</b>	<b>3460</b>	<b>38</b>	<b>A</b>
<b>11x/7x</b>	<b>51,0</b>	<b>3110</b>	<b>500</b>	<b>221</b>	<b>2265</b>	<b>1358</b>	<b>3420</b>	<b>38</b>	<b>B</b>
<b>11x/7x</b>	<b>53,0</b>	<b>4180</b>	<b>500</b>	<b>221</b>	<b>2800</b>	<b>1766</b>	<b>3330</b>	<b>39</b>	<b>C</b>
<b>12x/14x</b>	<b>59,0</b>	<b>5370</b>	<b>500</b>	<b>221</b>	<b>3395</b>	<b>2626</b>	<b>3990</b>	<b>47</b>	<b>C</b>
<b>16x/12x</b>	<b>59,0</b>	<b>3710</b>	<b>500</b>	<b>221</b>	<b>2565</b>	<b>1575</b>	<b>4710</b>	<b>50</b>	<b>A</b>
<b>16x/12x</b>	<b>60,0</b>	<b>4090</b>	<b>500</b>	<b>221</b>	<b>2755</b>	<b>1880</b>	<b>4640</b>	<b>50</b>	<b>B</b>
<b>16x/12x</b>	<b>62,0</b>	<b>5430</b>	<b>500</b>	<b>250</b>	<b>3590</b>	<b>2466</b>	<b>4510</b>	<b>51</b>	<b>C</b>

\*) Preferred types according to DB Telematik TNP 02/05



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### Additional Properties

Dimension	Outer diameter	Cable weight net	Standard supply length	Drum size	Transport weight gross	Copper content	Tensile strength max.	Fire load	r <sub>k</sub> -row
n	mm	kg/km	m	KTG	kg/drum	kg/km	N	MJ/m	
<b>AJ-02YSTF(L)2YDB2Y n x 4 x 0,9 STI LG</b>									
3 x	25,0	850	1000	161	1130	202	400	12	A
3 x	25,0	970	1000	161	1250	297	400	12	B
3 x	28,0	1590	1000	161	1870	604	390	13	C
<b>5 x *)</b>	<b>29,0</b>	<b>1050</b>	<b>1000</b>	<b>181</b>	<b>1430</b>	<b>265</b>	<b>640</b>	<b>15</b>	<b>A</b>
<b>5 x *)</b>	<b>29,0</b>	<b>1200</b>	<b>1000</b>	<b>181</b>	<b>1580</b>	<b>399</b>	<b>640</b>	<b>15</b>	<b>B</b>
<b>5 x *)</b>	<b>31,0</b>	<b>1880</b>	<b>1000</b>	<b>181</b>	<b>2260</b>	<b>717</b>	<b>630</b>	<b>15</b>	<b>C</b>
7 x	31,0	1180	1000	181	1560	323	890	16	A
7 x	32,0	1360	1000	201	1910	465	880	17	B
7 x	33,0	2080	1000	201	2630	1175	870	17	C
<b>10 x *)</b>	<b>37,0</b>	<b>1540</b>	<b>1000</b>	<b>221</b>	<b>2250</b>	<b>450</b>	<b>1190</b>	<b>21</b>	<b>A</b>
<b>10 x *)</b>	<b>37,0</b>	<b>1710</b>	<b>1000</b>	<b>221</b>	<b>2420</b>	<b>576</b>	<b>1190</b>	<b>22</b>	<b>B</b>
<b>10 x *)</b>	<b>40,0</b>	<b>2630</b>	<b>1000</b>	<b>221</b>	<b>3340</b>	<b>1022</b>	<b>1150</b>	<b>22</b>	<b>C</b>
14 x	40,0	1980	1000	221	2690	734	1620	24	B
15 x	41,0	1850	1000	250	2725	590	1710	25	A
15 x	41,0	2070	1000	250	2945	771	1710	26	B
15 x	44,0	3030	1000	250	3905	1200	1660	26	C
<b>16 x *)</b>	<b>41,0</b>	<b>1890</b>	<b>1000</b>	<b>250</b>	<b>2765</b>	<b>615</b>	<b>1830</b>	<b>26</b>	<b>A</b>
<b>16 x *)</b>	<b>41,0</b>	<b>2110</b>	<b>500</b>	<b>181</b>	<b>1435</b>	<b>785</b>	<b>1830</b>	<b>26</b>	<b>B</b>
<b>16 x *)</b>	<b>44,0</b>	<b>3080</b>	<b>500</b>	<b>201</b>	<b>2090</b>	<b>1226</b>	<b>1770</b>	<b>27</b>	<b>C</b>
<b>19 x *)</b>	<b>42,0</b>	<b>2030</b>	<b>500</b>	<b>181</b>	<b>1395</b>	<b>691</b>	<b>2150</b>	<b>28</b>	<b>A</b>
<b>19 x *)</b>	<b>43,0</b>	<b>2250</b>	<b>500</b>	<b>201</b>	<b>1675</b>	<b>861</b>	<b>2120</b>	<b>28</b>	<b>B</b>
<b>19 x *)</b>	<b>45,0</b>	<b>3240</b>	<b>500</b>	<b>201</b>	<b>2170</b>	<b>1302</b>	<b>2070</b>	<b>28</b>	<b>C</b>
<b>24 x *)</b>	<b>48,0</b>	<b>2460</b>	<b>500</b>	<b>221</b>	<b>1940</b>	<b>857</b>	<b>2530</b>	<b>35</b>	<b>A</b>
<b>24 x *)</b>	<b>49,0</b>	<b>2720</b>	<b>500</b>	<b>221</b>	<b>2070</b>	<b>1068</b>	<b>2530</b>	<b>35</b>	<b>B</b>
<b>24 x *)</b>	<b>51,0</b>	<b>3810</b>	<b>500</b>	<b>221</b>	<b>2615</b>	<b>1531</b>	<b>2440</b>	<b>36</b>	<b>C</b>
<b>30 x *)</b>	<b>50,0</b>	<b>2740</b>	<b>500</b>	<b>221</b>	<b>2080</b>	<b>1022</b>	<b>3090</b>	<b>39</b>	<b>A</b>
<b>30 x *)</b>	<b>51,0</b>	<b>3020</b>	<b>500</b>	<b>221</b>	<b>2220</b>	<b>1243</b>	<b>3050</b>	<b>39</b>	<b>B</b>
<b>30 x *)</b>	<b>53,0</b>	<b>4170</b>	<b>500</b>	<b>221</b>	<b>2795</b>	<b>1735</b>	<b>2970</b>	<b>39</b>	<b>C</b>

\*) Preferred types according to DB Telematik TNP 02/05



## AJ-02YSTF(L)2YDB2Y STI LG n x 4 x 1.4 / m x 4 x 0.9 mm and n x 4 x 0.9 mm

### Reduction Factor Curves

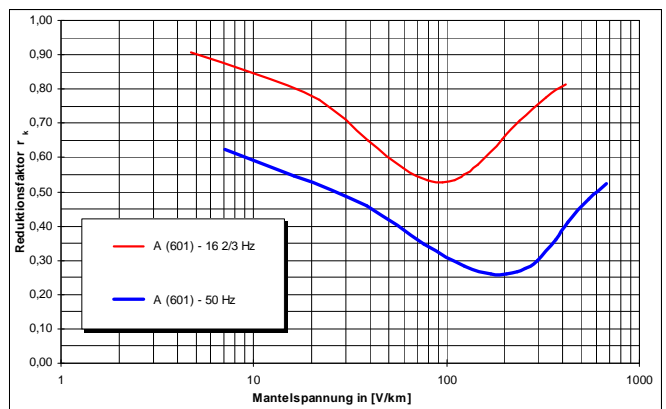
The following reduction factor curves are nominal value curves. The shown value pattern for the reduction factor is valid as a guideline for project planning. The upper deviation may not exceed:

... + 25 % for reduction factors according to  $r_k$ -row A

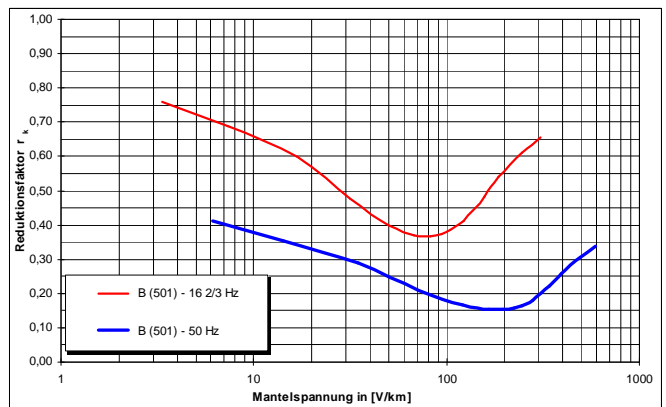
... + 20 % for reduction factors according to  $r_k$ -row B and C.

Origin: specification DB Telematik TNP 02

Reduction factor - value patter;  $r_k$ -row A



Reduction factor - value pattern;  $r_k$ -row B



Reduction factor - value pattern;  $r_k$ -row C

