

# INDUSTRIAL ETHERNET CABLE CAT. 5

## PROFINET 678 fixed installation, type A SPECIAL PROFINET 678 UL flexible application, type B, UL approval



ELETTROTEK KABEL® SPECIAL PROFINET 678 UL



### Construction:

<b>Conductor:</b>	<b>(PROFINET 678):</b> solid tinned copper conductor <b>(PROFINET 678 UL):</b> stranded tinned copper conductor, 7x0,16 mm - 26/7 AWG
<b>Insulation:</b>	PE compound
<b>Colour cores:</b>	white/blue, white/orange, white/green, white/brown
<b>Stranding:</b>	cores twisted in pairs, pairs twisted together
<b>Wrapping:</b>	aluminium tape <b>(PROFINET 678)</b>
<b>Wrapping:</b>	PETP foil <b>(PROFINET 678 UL):</b>
<b>Screen:</b>	tinned copper braid <b>(PROFINET 678)</b>
<b>Screen:</b>	aluminium tape + PETP foil and tinned copper braid <b>(PROFINET 678 UL)</b>
<b>Outer sheath:</b>	green (similar RAL 6018), PVC compound

### Technical data:

<b>Peak operating voltage:</b>	max. 350 V <b>(PROFINET 678)</b>
<b>Nominal voltage:</b>	125 V <b>(PROFINET 678 UL)</b>
<b>Test voltage:</b>	<b>(PROFINET 678)</b> core/core 1,5 kV core/screen 1,2 kV
<b>Test voltage:</b>	<b>(PROFINET 678 UL)</b> core/core 700 V x 1 min core/screen 700 V x 1 min
<b>Temperature range</b>	<b>(PROFINET 678):</b>
<i>Fixed laying:</i>	-30 up to +70°C
<i>Flexible installation:</i>	-5 up to +70°C
<b>Temperature range</b>	<b>(PROFINET 678 UL):</b>
<i>Fixed laying:</i>	-30 up to +80°C
<i>Flexible application:</i>	-5 up to +50°C
<b>Min. bending radius:</b>	
<i>Fixed laying:</i>	5 x d
<i>Sporadic movement:</i>	10 x d <b>(PROFINET 678 UL)</b>
<b>Ohmic resistance at 20°C max.Ω/km:</b>	max. 150, acc. to VDE 0812 <b>(PROFINET 678)</b>
<b>Max. DC conductor resistance:</b>	140 Ω/km <b>(PROFINET 678 UL)</b>
<b>Capacitance at 800 hz:</b>	48 pF/m <b>(PROFINET 678 UL)</b>
<b>Max. capacitance unbalance:</b>	1600 pF/km <b>(PROFINET 678 UL)</b>
<b>Propagation velocity at 100 MHz:</b>	approx. 75% <b>(PROFINET 678 UL)</b>
<b>Characteristic impedance:</b>	<b>(PROFINET 678)</b> 100Ω (± 10%) acc. to EN 50288-2-2, CAT 5 acc. to EN 50173-1
<b>Characteristic impedance:</b>	<b>(PROFINET 678 UL)</b> 100Ω (± 15%), CAT 5e
<b>Min. Insulation resistance:</b>	5 GΩ x km <b>(PROFINET 678 UL)</b>
<b>Transfer impedance:</b>	10 mΩ/m at 1 MHz, 4 mΩ/m at 10 MHz 4 mΩ/m at 30 MHz, 2 mΩ/m at 100 MHz <b>(PROFINET 678 UL)</b>
<b>Standard reference:</b>	IEC 61156-3, EN 50288-1, EN 50288-2-2 ISO IEC 11801

### Resistance:



**Flame retardant acc.to:**  
UL 1581 1061, CSA FT1, IEC 60332-1  
standard requirements **(PROFINET 678 UL)**



**Oil resistance acc.to:**  
DIN VDE 0473 part. 811-2-1 IEC 60811-2-1  
**(PROFINET 678)**  
EN 50363-4-1, IEC 60811-2-1, DIN VDE 0472-803  
UL 13 (60°C), acc. to ICEA S-82-552 and NEMA  
WC55 **(PROFINET 678 UL)**



**Sunlight resistant acc.to:**  
UL 1581 1200 standard requirement  
**(PROFINET 678 UL)**

### Features:

(UL) AWM style 1598 - 2571 30 V 80°C **(PROFINET 678 UL)**

RoHS and CE approval



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PROFINET 678 UL

Frequency (MHz)	ATTENUATION (dB/100 m)		NEXT (dB)		PS NEXT (dB)		PS EL-FEXT (dB/100m)		PS ACR dB/100 m)		RETURN LOSS (dB)	
	max. - STD	typical	min. - STD	typical	min.	min.	min - STD	typical	min.	typical	min. STD	typical
1	3,2	2,5	65,3	71,0	62,3	69,0	60,8	69,0	62,1	68,5	-	29,0
4	6,0	5,2	56,3	63,0	53,3	61,0	48,8	57,0	50,3	57,8	24,1	32,0
10	9,5	8,4	50,3	58,0	47,3	56,0	40,8	51,0	40,8	49,6	25,0	32,0
16	12,1	11	47,2	56,0	44,2	54,0	36,7	47,0	35,1	45,0		
20	13,6	12,5	45,8	54,0	42,8	52,0	34,8	45,0	32,2	41,5		
31,25	17,1	16,0	42,9	50,0	39,9	48,0	30,9	42,0	25,8	34,0	23,6	30,0
62,5	24,8	23,6	38,4	45,0	35,4	43,0	24,9	36,0	13,6	21,4	21,5	28,0
100	32,0	29,9	35,3	43,0	32,3	41,0	20,8	32,0	3,3	13,1	20,1	26,0
155,52		37,4		40,0		38,0	-	26,0	-	2,6	-	24,0
200		42,8		37,0		35,0	-	22,0	-	-	-	23,0

Part no.	No. of cores x cross section n x mm <sup>2</sup>	Outer-Ø ca. mm ± 10%	Copper weight kg/km	Cable weight approx. kg/km	AWG no. *)
39290CEX042M01	4x2x0,14	6,2	33	49	26
39300BEX042A26	4x2x0,14	6,2	33,0	54	26