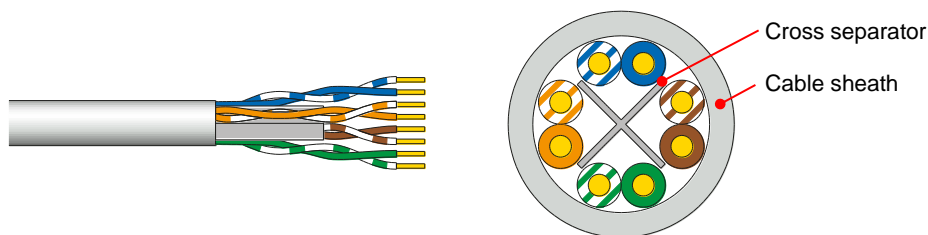


R&Mfreenet U/UTP Cat.6 450MHz 4PxAWG23 PVC Eca NVP=69% ISO/IEC 11801 ANSI/TIA-568.2 <source code> <batch no> <dd/mm/yy> <meter> m

<b>Cable reference</b>	<b>Part number</b>	R35056
	<b>Source code</b>	C
	<b>R&amp;M positioning</b>	Cat.6, Level 2

<b>Cable construction</b>	<b>Conductor</b>	Bare solid copper wire AWG23 ( $\geq \varnothing 0.55$ mm)
	<b>Insulation</b>	Polyethylene $\leq \varnothing 1.0$ mm
	<b>Twisting</b>	2 wires to the pair
	<b>Cable lay up</b>	4 pairs to the core with cross separator
	<b>Pair screen</b>	Non
	<b>Overall screen</b>	Non
	<b>Sheath</b>	PVC, gray RAL 7035



<b>Application</b>	Primary (Campus), Secondary (Riser), Tertiary (Horizontal) IEEE 802.3an: 10Base-T; 100Base-TX; 1000Base-T IEEE 802.5 16 MB; ISDN; TPDDI; ATM IEEE 802.3af / IEEE 802.3at / IEEE 802.3bt Confirming to European regulation "CPR" EN 50575
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<b>Standards</b>	ISO/IEC 11801 2nd ed.; EN 50173-1; ANSI/TIA-568.2 IEC 61156-5 2nd ed.; EN 50288-6-1; Power over Ethernet (PoE) / Type 1-4
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<b>Fire rating</b>	PVC  IEC 60332-1; EN50575; Eca; DOP E6004
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<b>Technical Data</b>	<b>Cable designation</b>	U/UTP Cat.6 450MHz 4PxAWG23
	<b>Packaging</b>	Drum 500 m
	<b>Outer diameter</b>	Nominal 6.0 mm
	<b>Weight</b>	40 kg / km
	<b>Thermal load</b>	358 MJ / km
	<b>Segregation class</b>	b
	<b>Tensile force</b>	100 N

<b>Mechanical Properties</b>	<b>Bending radius</b>	$\geq 25$ mm during operation (without load)
		$\geq 50$ mm during installation (with load)
	<b>Temperature range</b>	During operation -20°C... + 60°C
	During installation 0°C... + 50°C	

## Electrical Properties (at 20°C ± 5°C)





DC loop resistance		≤ 17,6 Ω / 100 m
Resistance unbalance		≤ 2 %
Test voltage	DC, 1 min, core/core	1000 V
Insulation resistance	500 V	≥ 5000 MΩ * km
Capacitance		48 pF / m nom.
Capacitance unbalance		≤ 1500 pF / km
Mean characteristic impedance @ 100 MHz		100 ± 5 Ω
Nominal velocity of propagation		Approx. 69 %
Propagation delay	At 1 MHz	≤ 535 ns / 100 m
Delay skew		≤ 40 ns / 100 m
Coupling attenuation		≥ 40 dB
Balance TCL	At 1 MHz	≥ 55 dB
	At 10 MHz	≥ 40 dB
	At 100 MHz	≥ 35 dB

## Typical transmission characteristics (at 20°C)

f (MHz)	Attenuation (dB/100m)		NEXT (dB)		PS-NEXT (dB)		ACR-F <sup>1)</sup> (dB/100m)		PS-ACR-F <sup>1)</sup> (dB/100m)		Return loss (dB)	
	Max	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ
4	3.8	3.8	66.3	69	63.3	66	58	70	55	68	23	23
10	6.0	6.0	60.3	63	57.3	60	50	62	47	56	25	25
20	8.5	8.5	55.8	59	52.8	56	44	56	41	54	25	25
62.5	15.5	15.1	48.4	51	45.4	48	34.1	46	31.1	44	21.5	21.5
100	19.9	19.1	45.3	48	42.3	45	30	42	27	40	20.1	20.1
250	33	32	39.3	42	36.3	39	22	34	19	32	17.3	17.3
450	-	36	-	37	-	34	-	29	-	26	-	20

<sup>1)</sup> ACR-F was formerly known as ELFEXT.

## Recommended connection technique

Module		Perm. Link Class D	Perm. Link Class E	Channel Class E <sub>A</sub>	Perm. Link Class E <sub>A</sub>	Short Link Class E <sub>A</sub>
	Cat.5e/u	✓	-	-	-	-
	Cat.6/u	✓	✓	-	-	-
	Cat.6/u	✓	✓	-	-	-
	Cat.6 <sub>A</sub> /u	✓	✓	-	-	-