

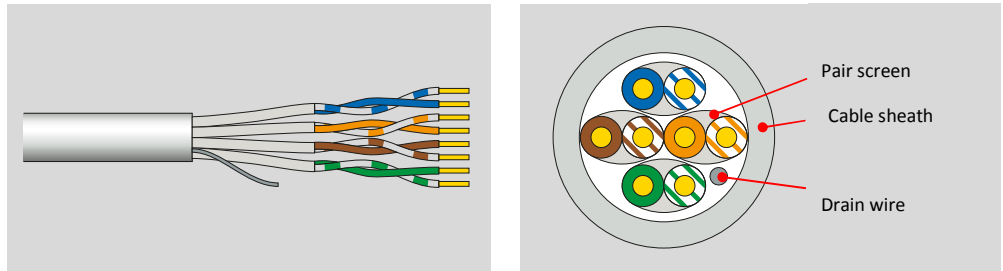
R&Mfreenet Real10 U/FTP Cat.6_A 650 MHz



R&Mfreenet U/FTP Cat.6A 650MHz 4PxAWG23 LSZH Eca NVP=76% ISO/IEC 11801 ANSI/TIA-568-C.2 U <batch no.> <dd/mm/yy> <meter> m

Cable reference	Part number	R308247
	Source code	U
	R&M positioning	Cat.6 _A , Level 1

Cable construction	Conductor	Bare solid copper wire AWG23 (≥ Ø 0.56 mm)
	Insulation	Polyethylene ≤ Ø 1.35 mm
	Twisting	2 wires to the pair
	Cable lay up	4 paires to the core
	Pair screen	Alu / polyester tape
	Overall screen	Non, tin plated copper wire
	Sheath	LSZH, gray RAL 7035



Application	<p>Primary (Campus), Secondary (Riser), Tertiary (Horizontal) IEEE 802.3an: 10Base-T; 100Base-TX; 1000Base-T; 10GBase-T IEEE 802.5 16 MB; ISDN; TPDDI; ATM IEEE 802.3af-2002: POE; IEEE 802.3at: POE+ Confirming to European regulation "CPR" EN 50575</p>
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Standards	<p>ISO/IEC 11801 2nd ed.; EN 50173-1; ANSI/TIA-568-C.2 IEC 61156-5 2nd ed.; EN 50288-10</p>
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Fire rating	<p>LSZH IEC 60332-1; IEC 60754-2; IEC 61034 EN50575; Eca; DoP E6531</p>
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Technical Data	Cable designation	Real10 U/FTP Cat.6A 650MHz 4PxAWG23
	Packaging	Drum 500 m
	Outer diameter	Nominal 7.25 mm
	Weight	51 kg / km
	Segregation class	c
	Tensile force	100 N

Mechanical Properties	Bending radius	≥ 40 mm during operation (without load) ≥ 65 mm during installation (with load)
	Temperature range	During operation -20°C...+ 60°C During installation 0°C...+ 50°C



Convincing cabling solutions

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Electrical Properties
(at 20°C ± 5°C)





DC loop resistance		≤ 18.0 Ω / 100 m
Resistance unbalance		≤ 2 %
Test voltage	DC, 1 min, core/core	1000 V
Insulation resistance	500 V	≥ 5000 MΩ * km
Capacitance		43 pF / m max.
Capacitance unbalance		≤ 1500 pF / km
Mean characteristic impedance		100 ± 25 Ω
Nominal velocity of propagation		Approx. 76 %
Propagation delay	At 1 MHz	≤420 ns / 100 m
Delay skew		≤ 20 ns / 100 m
Coupling attenuation		≥ 55 dB

Typical transmission characteristics (at 20°C)

f (MHz)	Attenuation (dB/100 m)		NEXT (dB)		PS-NEXT (dB)		ACR-F ¹⁾ (dB/100 m)		PS-ACR-F ¹⁾ (dB/100 m)		Return loss (dB)	
	Max	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ	Min	Typ
4	3.8	3.7	66.3	92	63.3	89	56	74	53	68	23	30
10	5.9	5.7	60.3	89	57.3	86	48	72	45	67	25	27
20	8.4	8.2	55.8	79	52.8	76	42	68	39	63	25	27
62.5	15	14.6	48.4	77	45.4	74	32.1	56	29.1	51	21.5	25
100	19.1	18.6	45.3	74	42.3	71	28	52	25	47	20.1	23
250	31.1	30.4	39.3	68	36.3	65	20	44	17	39	17.3	21
500	45.3	44.4	34.8	65	31.8	62	14	32	11	30	17.3	20
600	-	48.5	-	63	-	60	-	25	-	22	-	19
650	-	51.4	-	58	-	55	-	18	-	15	-	18

¹⁾ ACR-F was formerly known as ELFEXT.

Recommended connection technique

Module		Perm. Link Class D	Perm. Link Class E	Channel Class E _A	Perm. Link Class E _A	Short Link Class E _A (*)
	Cat.5e/s	✓	-	-	-	-
	Cat.6 Real10/s	✓	✓	✓	-	-
	Cat.6 _A EL/s	✓	✓	✓	✓	✓
	Cat.6A/s	✓	✓	✓ Best in Class	✓ Best in Class	✓ Best in Class

(*): see installation guide

Third party certificate 3P Third Party Testing

Extended Channel Lengths This cable is covered under the R&M *freenet* cabling system for Channel length longer than 100m if installed and tested according to R&M Installation and Testing Guideline.