CS2Y2YFr1V, CS2YAb2YFr1 and CS2YEAIAb2YFr1
n x 1.0 / 1.5 / 2.5 mm² (H95/100/120)

Signalling cable
According to specification:
Romanian State Railways ST cod.Nr.1/2004 rev.1.0 of 15.06.2011

Principle drawing
CS2YEAIAb2YFr1 30x1x1.5 S

Application
The cables are used as railways cables and can be installed directly into the ground or in ducts. The standard rated Uo/U voltage of these cables are 0.6/1 kV.

Colour Code
In each layer, the first core is black, the second core is white. All remaining cores are coloured in a repeating sequence of the following colours: red, grey, blue, brown, green, yellow.

Construction

	CS2Y2YFr1	CS2YAb2YFr1	CS2YEAIAb2YFr1
Conductor	copper wire, solid, 1.0, 1.5 or 2.5 mm², soft annealed		
Insulation	solid PE (2Y)		
Twisting	cores stranded in concentric layers		
Cable core covering	with suitable non-hygroscopic plastic tape(s)		
Inner sheath	-	PE (2Y) nom. min wall thickness 1.2 mm	PE (2Y) nom. min. wall thickness 1.2 mm
Screen	-	-	concentric of aluminium wires 1.7 mm
Separator	-	one layer plastic tape with overlapping	one layer plastic tape with overlapping
Armouring	-	two layers galvanized steel tape 0.2 mm	two layers galvanized steel tape 0.2 mm
Outer Sheath	FR[1)]-PE (2YFr1V), reinforced, black	FR[1)]-PE (2YFr1), black nom. min. wall thickness 1.8	FR[1)]-PE (2YFr1), black nom. min. wall thickness 1.8

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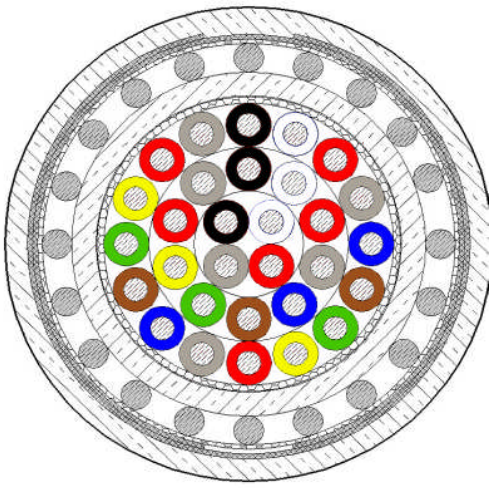
	nom. min wall thickness 1.8 mm	mm	

Note: FR [1)] flame retardant and no halogen material



CS2Y2YFr1V, CS2YAb2YFr1 and CS2YEAIAb2YFr1
n x 1.0 / 1.5 / 2.5 mm² (H95/100/120)

Mechanical and Thermal Properties

Admissible bending radius	un-armoured	≥ 7.5 x outer cable diameter
	armoured	≥ 10 x outer cable diameter
Temperature range	during operation	- 40°C to + 70°C
	during installation	- 10°C to + 70°C
Flame retardant		IEC 60332-1

Electrical Properties

at 20°C ± 5°C

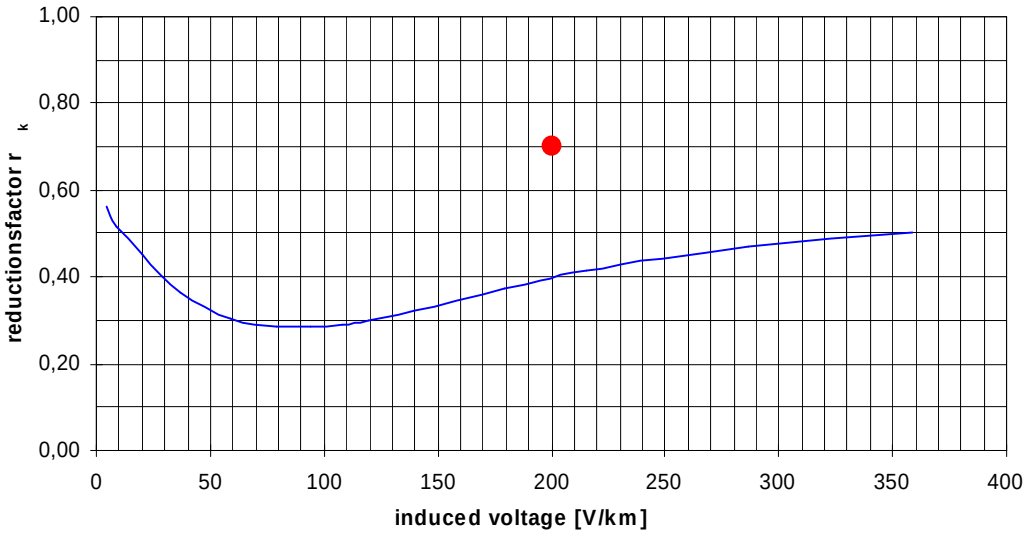
Conductor cross section	mm²	1.0	1.5	2.5
Conductor diameter	mm, nom.	1.13	1.38	1.78
Core diameter	mm, nom.	2.1	2,6	3.2
Conductor diameter	Ω/km	≤ 18.1	≤ 11.9	≤ 7.2
Insulation resistance	GΩxkm		≥ 10	
Mutual capacitance at 800Hz	nF/km	≤ 95 or ≤ 100	≤ 95 or ≤ 100 or ≤ 120	
Reduction factor at 200 V/km and 50 Hz			≤ 0,7	
Test voltage between all electrical elements				
at 50 Hz 1 min	V		4000	
at 50 Hz 4 hours	V		1800	

Typical Reduction Factor

AJ-2Y2YABY 33x1x1.5 S
(20 Al-wires 1.7 mm and 2 galvanized steel tapes 0.2 mm)

CS2Y2YFr1V, CS2YAb2YFr1 and CS2YEAIAb2YFr1
n x 1.0 / 1.5 / 2.5 mm² (H95/100/120)

typical reduction factor curve at 50 Hz



CS2Y2YFr1V, CS2YAb2YFr1 and CS2YEAIAb2YFr1 n x 1.0 / 1.5 / 2.5 mm² (H95/100/120)

Additional Properties

Dimension	Outer diameter	Cable weight net	Standard supply length	Drum size flange-ø	Transport weight gross	Copper content	Aluminium content	SAP Mat. No.
	mm	kg/km	m	mm	kg/drum	kg/km	kg/km	
CS2YAb2YFr1 nx1.0 mm² H100								
4	13.5	230	2000	1400	670	38	0	AA257RO1152
5	14.5	270	2000	1400	740	48	0	AA257RO11552
7	15	300	2000	1400	800	66	0	AA257RO1162
9	17	360	2000	1600	1030	85	0	AA257RO1172
12	17.5	400	2000	1600	1120	114	0	AA257RO1182
16	19	490	2000	1600	1290	151	0	AA257RO1192
19	19.5	530	2000	1600	1370	181	0	AA257RO1202
21	19.5	550	2000	1600	1420	200	0	AA257RO1212
24	21.5	620	2000	1800	1670	227	0	AA257RO1222
27	22	670	2000	1800	1760	255	0	AA257RO1232
30	22.5	715	1000	1400	930	285	0	AA257RO1242
33	24	780	1000	1600	1100	312	0	AA257RO1252
37	24	825	1000	1600	1150	350	0	AA257RO1262
42	26	925	1000	1600	1240	397	0	AA257RO1272
48	27	1010	1000	1600	1330	454	0	AA257RO1282
52	27.5	1070	1000	1600	1380	494	0	AA257RO1292
CS2YAb2YFr1 nx1.5 mm² H120								
4	14	270	2000	1400	740	57	0	1007318
7	15.5	350	2000	1400	900	103	0	1007324
9	18	430	2000	1600	1160	133	0	1007328
12	18.5	490	2000	1600	1290	171	0	1007334
16	20.5	590	2000	1600	1500	228	0	1015879
24	23	770	1000	1600	1090	342	0	1007342
27	24	840	1000	1600	1160	385	0	AA257RO2082
33	25.5	980	1000	1600	1300	470	0	1007348
48	29	1290	1000	1600	1610	684	0	AA257RO2132
CS2YAb2YFr1 nx2.5 mm² H120								
4	15.5	340	2000	1400	880	95	0	1015880
7	17.5	450	2000	1600	1220	166	0	1015881
9	20.5	560	2000	1600	1440	214	0	1007330
12	21	660	2000	1800	1740	285	0	1015883
16	23.5	820	1000	1600	1140	380	0	1015884
19	24	900	1000	1600	1220	451	0	AA257RO2972
24	27	1100	1000	1600	1420	570	0	AA257RO2992
33	30	1410	1000	1600	1720	784	0	AA257RO3022

Additional Properties

Dimension	Outer diameter	Cable weight net	Standard supply length	Drum size flange-ø	Transport weight gross	Copper content	Aluminium content	SAP Mat. No.
	mm	kg/km	m	mm	kg/drum	kg/km	kg/km	
CS2YEAlAb2YFr1 nx1.0 mm² H100								

CS2Y2YFr1V, CS2YAb2YFr1 and CS2YEAIAb2YFr1 n x 1.0 / 1.5 / 2.5 mm² (H95/100/120)

4	17	340	2000	1600	990	38	45	AA257RO149
5	18	370	2000	1600	1060	48	53	AA257RO1495
7	18.5	400	2000	1600	1120	66	55	AA257RO150
9	20.5	470	2000	1600	1250	85	58	AA257RO151
12	21	520	2000	1800	1470	114	63	AA257RO152
16	22.5	620	1000	1600	930	151	69	AA257RO153
19	23	650	1000	1600	970	181	69	AA257RO154
21	23	670	1000	1600	990	200	71	AA257RO155
24	25	760	1000	1600	1080	227	77	AA257RO156
27	26	810	1000	1600	1130	255	77	AA257RO157
30	26.5	850	1000	1600	1170	285	79	AA257RO158
33	27.5	920	1000	1600	1240	312	83	AA257RO159
37	28	970	1000	1600	1290	350	88	AA257RO160
42	30	1080	1000	1600	1400	397	94	AA257RO161
48	30.5	1170	1000	1800	1590	454	96	AA257RO162
52	31.5	1230	1000	1800	1650	494	99	AA257RO163
CS2YEAlAb2YFr1 nx1.5 mm² H120								
4	17.5	370	2000	1600	1060	57	53	1007358
7	19.5	460	2000	1600	1230	100	58	1007361
9	21.5	540	2000	1800	1500	128	66	1007364
12	22	610	2000	1800	1640	171	73	AA257RO237
16	24	720	1000	1600	1040	228	79	1007369
19	24.5	780	1000	1600	1100	271	79	1007372
24	27	920	1000	1600	1240	342	93	1007376
27	27.5	980	1000	1600	1300	385	93	1007378
30	28	1050	1000	1600	1360	428	93	1012339
33	29	1130	1000	1600	1450	470	99	1007382
37	29.5	1200	1000	1600	1520	527	99	1007384
42	32	1340	1000	1800	1760	599	112	1007386
48	32.5	1460	1000	1800	1880	684	112	1007388
CS2YEAlAb2YFr1 nx2.5 mm² H120								
4	19	450	2000	1600	1210	95	58	1007359
7	21	570	2000	1800	1570	166	64	1007362
9	24	700	1000	1600	1010	214	77	1007365
12	25	800	1000	1600	1110	285	77	1007367
16	27	970	1000	1600	1280	380	89	1007370
19	27.5	1050	1000	1600	1370	451	93	1007373
30	32	1460	1000	1800	1880	713	112	1007380

[PRODUCT CODE TABLE]