2010-2011 CATALOGUE 1

Special Cables

FANTON®
CABLES AND ELECTRICAL COMPONENTS

FANTON®

CABLES AND ELECTRICAL COMPONENTS

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"Innovation aimed at improving the future in an environmentally and safety conscious manner with the experience of a time-honoured Italian firm."

Renzo Fanton

The European Union has issued clear directives to ensure better management of electrical waste throughout the production chain, to safeguard an environment increasingly under threat from problematic waste.

Fanton SpA have always responded to the need for sustainable development with strategies that aim to comply with the strict European directives on production, disposal and the environment.

The fundamental EU legislation on environmental policy is the RoHS Directive 2002/95/EC - Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment.

In compliance with the RoHS directive, which restricts the use of some hazardous substances and pollutants in electrical and electronic equipment, Fanton SpA banned the use of substances such as heavy metals (lead, mercury, cadmium and hexavalent chromium) and flame-retardants (brominated biphenyls, etc.) by July 2006, the year when the Directive came into force.

Compliance with this standard produces products that are safer for their users and the environment, two important aims towards which much of the work of our R&D laboratory and production departments is directed.

INDEX

QUICK REFERENCE TABLE

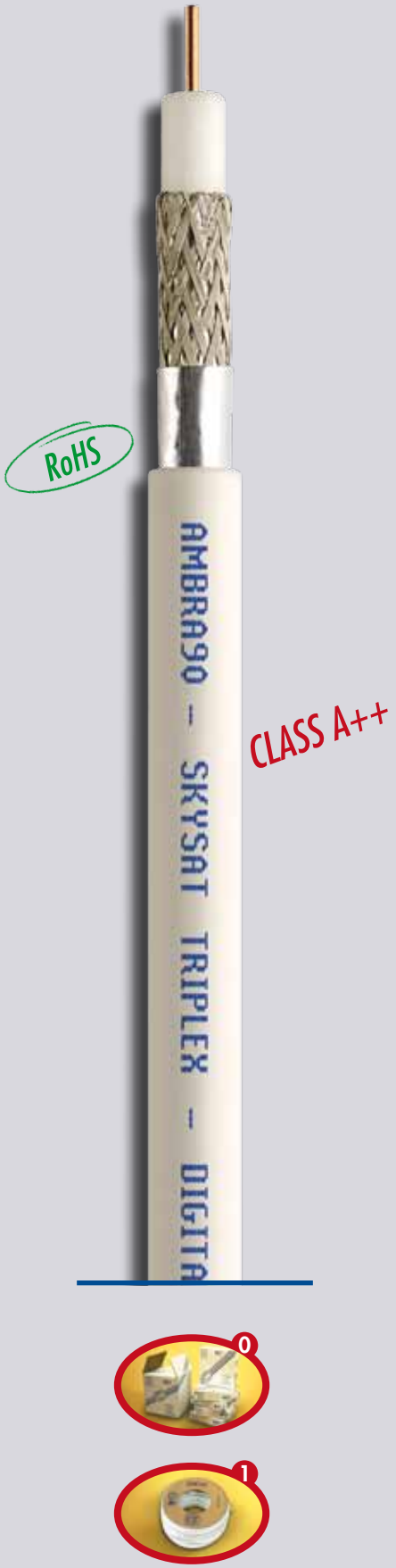
Code	Page	Code	Page	Code	Page	Code	Page	Code	Page	Code	Page	Code	Page	Code	Page
A11747	62	A30011	30	A43061	18	A70291	37	A75811	38	A80451	44	A83091	40	A84021	42
A11767	64	A30021	30	A43071	18	A70311	37	A75827	38	A80461	44	A83101	40	A84031	42
A11807	62	A30031	30	A43081	18	A70321	37	A75837	38	A80471	44	A83111	40	A84041	42
A11847	64	A30041	30	A43091	18	A70331	37	A75907	38	A80481	44	A83121	40	A84051	42
A11867	62	A30051	30	A43201	18	A70341	37	A75917	38	A80491	44	A83131	40	A84061	42
A11877	62	A32001	30	A43211	18	A70351	37	A75927	38	A80501	44	A83141	40	A84071	42
A11897	62	A32011	30	A43221	18	A70361	37	A75937	38	A80511	44	A83151	40	A84081	42
A11907	62	A32021	30	A43231	18	A70371	37	A75957	38	A80521	44	A83161	40	A84091	42
A11917	62	A32031	30	A43241	18	A70381	37	A75967	38	A80531	44	A83211	40	A84101	42
A11927	62	A32041	30	A43251	18	A70391	37	A75977	38	A80541	44	A83221	40	A84111	42
A11977	62	A33001	29	A43301	18	A70411	37	A75987	38	A80551	44	A83231	40	A84126	42
A11987	62	A33011	29	A43311	18	A70421	37	A77497	64	A80561	44	A83241	40	A84211	42
A12261	32	A33101	29	A43321	18	A70431	37	A77507	64	A80611	45	A83251	40	A84221	42
A12271	32	A33111	29	A43331	18	A70441	37	A77517	64	A80621	45	A83261	40	A84231	42
A12281	32	A33201	29	A43341	18	A70451	37	A77527	64	A80631	45	A83271	40	A84241	42
A12291	32	A33211	29	A43351	18	A70461	37	A77567	64	A80641	45	A83281	40	A84251	42
A12301	32	A33221	29	A47607	23	A70471	37	A77577	64	A80651	45	A83291	41	A84261	42
A12311	32	A33301	29	A47617	23	A70481	37	A77787	64	A80661	45	A83301	41	A84271	42
A12801	32	A33311	29	A47707	23	A70491	37	A77797	64	A80671	45	A83311	41	A84281	42
A12851	32	A33321	29	A47717	23	A70511	37	A77927	64	A80681	45	A83321	41	A84291	42
A20361	14	A34601	28	A48606	22	A70521	37	A77957	64	A80691	45	A83331	41	A84306	42
A20366	14	A34611	28	A49101	21	A70531	37	A78047	64	A80701	45	A83341	41	A84316	42
A20367	14	A34701	28	A49121	21	A70541	37	A78177	64	A80711	45	A83351	41	A84326	42
A21010	7	A34711	28	A49131	21	A70551	37	A78237	64	A80721	45	A83361	41	A84511	46
A21011	7	A34811	28	A49141	21	A70561	37	A79011	50	A80731	45	A83411	41	A84521	46
A21210	6	A40001	19	A49221	21	A70571	37	A79021	50	A80741	45	A83421	41	A84531	46
A21211	6	A40011	19	A49231	21	A70587	37	A79031	51	A80751	45	A83431	41	A84541	46
A21220	7	A40021	19	A49241	21	A70597	37	A79101	51	A80761	45	A83441	41	A84551	46
A21221	7	A40031	19	A63001	16	A70611	37	A79111	51	A80811	45	A83451	41	A84561	46
A21230	7	A40041	19	A63006	16	A70621	37	A79121	51	A80821	45	A83461	41	A84571	46
A21231	7	A40201	19	A63007	16	A70631	37	A79201	52	A80831	45	A83471	41	A84581	46
A21240	7	A40221	19	A63021	15	A70641	37	A79211	52	A80841	45	A83481	41	A84591	46
A21241	7	A40241	19	A63026	15	A70657	37	A79221	52	A80851	45	A83491	41	A84606	46
A21250	6	A40251	19	A63027	15	A70667	37	A80011	43	A80861	45	A83501	41	A84616	46
A21251	6	A40401	19	A65041	15	A70677	37	A80021	43	A80871	45	A83511	41	A84626	46
A21260	6	A40411	19	A65046	15	A70687	37	A80031	43	A80881	45	A83521	41	A84711	46
A21261	6	A40421	19	A65047	15	A70697	37	A80041	43	A80891	45	A83531	41	A84721	46
A21451	8	A40431	19	A65071	20	A70701	37	A80051	43	A80901	45	A83541	41	A84731	46
A21456	8	A41001	20	A65076	20	A70717	37	A80061	43	A80911	45	A83551	41	A84741	46
A21457	8	A41011	20	A65077	20	A70727	37	A80071	43	A80921	45	A83561	41	A84751	46
A21560	6	A41021	20	A65111	20	A70737	37	A80081	43	A81001	47	A83611	41	A84761	46
A21561	6	A41031	20	A65116	20	A70807	37	A80091	43	A81011	47	A83621	41	A84771	46
A21571	8	A41041	20	A65117	20	A70817	37	A80101	43	A81021	47	A83631	41	A84786	46
A21576	8	A41201	20	A65121	20	A70827	37	A80111	43	A81031	47	A83641	41	A84796	46
A21577	8	A41221	20	A65126	20	A70837	37	A80121	43	A81041	47	A83651	41	A84806	46
A22001	10	A41241	20	A65127	20	A71401	34	A80131	43	A81051	47	A83661	41	A84816	46
A22006	10	A41251	20	A65131	20	A71411	34	A80141	43	A81061	47	A83671	41	A84826	46
A22007	10	A41401	20	A65136	20	A71421	34	A80151	43	A81101	47	A83681	41	A87211	60
A22021	10	A41411	20	A65137	20	A71431	34	A80161	43	A81111	47	A83691	41	A87221	55
A22026	10	A41421	20	A65211	14	A71441	34	A80211	44	A81121	47	A83701	41	A87281	56
A22027	10	A41431	20	A65216	14	A71451	34	A80221	44	A81131	47	A83711	41	A87341	60
A22041	10	A42001	20	A65217	14	A71461	34	A80231	44	A81141	47	A83721	41	A87361	15
A22046	10	A42011	20	A65241	15	A71471	34	A80241	44	A81151	47	A83731	41	A87366	15
A22047	10	A42021	20	A65246	15	A71481	34	A80251	44	A81161	47	A83741	41	A87367	15
A22061	11	A42031	20	A65247	15	A71491	34	A80261	44	A81201	47	A83751	41	A87391	14
A22066	11	A42201	20	A65381	14	A71501	34	A80271	44	A81211	47	A83761	41	A87396	14
A22067	11	A42221	20	A65386	14	A71511	34	A80281	44	A81221	47	A83811	41	A87397	14
A22081	11	A42241	20	A65387	14	A71801	35	A80291	44	A81231	47	A83821	41	A87401	14
A22086	11	A42251	20	A65391	15	A71811	35	A80301	44	A81241	47	A83831	41	A87406	14
A22087	11	A42401	20	A65396	15	A71821	35	A80311	44	A81251	47	A83841	41	A87407	14
A22101	11	A42411	20	A65397	15	A71831	35	A80321	44	A81261	47	A83851	41	A87431	54
A22106	11	A42421	20	A70211	37	A71841	35	A80331	44	A83011	40	A83861	41	A87441	58
A22107	11	A42431	20	A70221	37	A71851	35	A80341	44	A83021	40	A83871	41	A87451	58
A22121	11	A43001	18	A70231	37	A71861	35	A80351	44	A83031	40	A83881	41	A87461	59
A22126	11	A43011	18	A70241	37	A75701	38	A80361	44	A83041	40	A83891	41	A87471	59
A22127	11	A43021	18	A70251	37	A75711	38	A80411	44	A83051	40	A83901	41	A87501	57
A22301	10	A43031	18	A70261	37	A75721	38	A80421	44	A83061	40	A83911	41	A87511	57
A22306	10	A43041	18	A70271	37	A75731	38	A80431	44	A83071	40	A83921	41	A87521	57
A22307	10	A43051	18	A70281	37	A75801	38	A80441	44	A83081	40	A84011	42	A87531	57

AMBRA90 CAVI

SPECIAL CABLES DIVISION

SATV COAXIAL CABLES

- Profexional SATV
- Standard SATV
- For underground laying



Profexional series

NEW

Code	A21210 SAT 0.75 PRO	A21250 SKYSAT PRO	A21260 SKYSAT TRIPLEX	A21560 SKYSAT PLUS
▼ GENERAL SPECIFICATIONS				
Inner cond.	Cu	Cu	Cu	Cu
diam. (mm)	0,75	1,13	1,13	1,02
Dielectric	PEG	PEG	PEG	PEG
diam. (mm)	3,50	4,80	4,80	4,80
Shield:				
Foil	Al/Pet/Al	Al/Pet/Al	Al/Pet/Al	Al/Copo
Covering	120%	120%	120%	120%
Braid	CuSn	CuSn	CuSn	CuSn
Covering	85%	78%	78%	65%
Foil	Pet	Pet	Al/Pet/Al	Al/Pet
Covering	-	-	120%	-
Jacket	PVC	PVC	PVC	PVC
Colour	WHITE	WHITE	WHITE	WHITE
diam. (mm)	5,00	6,70	6,70	6,60
▼ ELECTRICAL SPECIFICATIONS				
Impedance (Ω)	75±3	75±3	75±3	75±3
Capacitance (pF/m)	55±2	55±2	55±2	55±2
Screening factor (dB)	A	A+	A++	A++
30 - 1000 MHz	>90	>100	>105	>105
1000-2000 MHz	>90	>90	>95	>105
2000-3000 MHz	>90	>90	>90	>100
Velocity factor (%)	85	85	85	85
S.R.L. MHz (dB)				
5÷470	>28	>30	>30	>30
470÷1000	>26	>30	>30	>28
1000÷2000	>24	>28	>28	>26
2000÷3000	>20	>24	>24	>24
ATTENUATION (dB/100 m)				
MHz				
50	5,60	3,90	3,00	3,80
200	11,20	8,10	7,40	8,10
470	17,80	13,20	12,60	13,10
862	24,70	18,40	18,10	18,20
1000	26,80	20,00	19,90	20,40
1350	31,60	24,20	23,70	24,10
1750	36,30	27,50	27,70	27,40
2150	40,80	30,50	30,30	30,10
Min. bending radius				
(mm)	50	70	70	70

▼ STANDARD PACKAGING

Code final no.	Manufacturing	A2121_	A2125_	A2126_	A2156_
0	in stock	150 m x 5	100 m x 5	100 m x 5	100 m x 5
1	in stock	150 m	100 m	100 m	100 m

ON REQUEST: • LSZH jacket in White

Standard series

Code	A21220 MINISAT	A21230 SAT 0.75	A21240 SAT 1.00	A21010 SKYSAT
▼ MANUFACTURING SPECIFICATIONS				
Inner cond.	Cu	Cu	Cu	Cu
diam. (mm)	0,50	0,75	1,02	1,13
Dielectric	PEG	PEG	PEG	PEG
diam. (mm)	2,00	3,50	4,30	4,80
Shield:				
Foil	Al/Pet/Al	Al/Pet/Al	Al/Pet/Al	Al/Pet/Al
Covering	120%	120%	120%	120%
Braid	CuSn	CuSn	CuSn	CuSn
Covering	50%	43%	32%	44%
Foil	Pet	Pet	Pet	Pet
Jacket	PVC	PVC	PVC	PVC
Colour	WHITE	WHITE	WHITE	WHITE
diam. (mm)	3,60	5,00	6,10	6,70
▼ ELECTRICAL SPECIFICATIONS				
Impedance (Ω)	75±3	75±3	75±3	75±3
Capacitance (pF/m)	55±2	55±2	55±2	55±2
Screening factor (dB) Class	B	B	B	B
30 - 1000 MHz	>80	>80	>75	>80
1000-2000 MHz	>70	>80	>75	>80
2000-3000 MHz	>60	>75	>65	>70
Velocity factor (%)	82	85	85	85
S.R.L. MHz (dB)				
5÷470	>26	>28	>30	>30
470÷1000	>24	>26	>30	>28
1000÷2000	>22	>24	>28	>26
2000÷3000	>18	>20	>20	>24
ATTENUATION (dB/100 m)				
MHz				
50	11,80	5,80	4,80	4,10
200	21,40	11,50	9,30	8,30
470	32,50	18,20	14,70	13,30
862	44,40	24,90	20,40	18,50
1000	48,00	27,00	22,20	20,20
1350	56,40	31,80	26,20	23,90
1750	65,10	36,60	30,50	27,80
2150	75,50	40,90	34,00	31,00
Min. bending radius				
(mm)	35	50	60	70

▼ STANDARD PACKAGING

Code final no.	Manufacturing	A2122_	A2123_	A2124_	A2101_
0	in stock	200 m x 5	150 m x 5	100 m x 5	100 m x 5
1	in stock	100 m	150 m	100 m	100 m

FOR UNDERGROUND LAYING NEW

Code	A21451 CA110	A21571 CA158
▼ MANUFACTURING SPECIFICATIONS		
Inner cond.	Cu	Cu
diam. (mm)	1,13	1,58
Dielectric	PEG	PEG
diam. (mm)	4,80	6,90
Shield:		
Foil	Al/Pet/Al	Al/Pet/Al
Covering	120%	120%
Braid	CuSn	CuSn
Covering	78%	90%
Foil	Pet	
Jacket	PE	PE
Colour	BLACK	BLACK
diam. (mm)	7,20	10,10
▼ ELECTRICAL SPECIFICATIONS		
Impedance (Ω)	75±3	75±3
Capacitance (pF/m)	55±2	55±2
Screening factor (dB) Class	A+	A
30 - 1000 MHz	>100	>90
1000-2000 MHz	>90	>90
2000-3000 MHz	>90	>90
Velocity factor (%)	85	85
S.R.L. MHz (dB)		
5÷470	>30	>28
470÷1000	>30	>26
1000÷2000	>28	>20
2000÷3000	>24	>18
ATTENUATION (dB/100 m)		
MHz		
50	3,90	2,80
200	8,10	5,60
470	13,20	8,80
862	18,40	13,50
1000	20,00	14,70
1350	24,20	17,80
1750	27,50	20,80
2150	30,50	24,20
Min. bending radius		
(mm)	80	100

▼ STANDARD PACKAGING

Code final no.	Manufacturing	A2145_	A2157_
1	in stock	100 m	100 m
6	in stock	500 m	500 m

ON REQUEST: • LSZH jacket in White

AMBRA90 CAVI

SPECIAL CABLES DIVISION

RADIOFREQUENCY RG COAXIAL CABLES

- RG 58 C/U MIL
- RG 58 Type
- RG 59 B/U MIL
- RG 59 B/U Double Sheath
- RG 59 Type
- RG 11/U MIL
- RG 213/U MIL
- RG 174/U MIL

RADIOFREQUENCY COAXIAL CABLES – RG

Code	A22001 RG 58 C/U MIL-C-17/28C	A22021 RG 58 Type	A22041 RG 59 B/U MIL-C-17/29C	A22301 RG 59 B/U Double Sheath
				GR. 4

▼ MANUFACTURING SPECIFICATIONS

Inner Cond.	CuSn	Cu	FeCu	FeCu
diam. (mm)	19x0,18	19x0,18	0,58	0,58
Dielectric	PE	PE	PE	PE
diam. (mm)	2,95	2,95	3,70	3,70
Shield:				
Braid	CuSn	Cu	Cu	Cu
Coverage	91%	70%	91%	91%
Jacket	PVC	PVC	PVC	PVC
Colour	BLACK	BLACK	BLACK	GRAY
diam. (mm)	4,90	4,90	6,10	7,50

▼ ELECTRICAL SPECIFICATIONS

Impedance (Ω)	50±3	50±3	75±3	75±3
Capacitance (pF/m)	100±2	100±2	67±2	67±2
Velocity factor (%)	66	66	66	66
ATTENUATION				
MHz (dB/100 m)				
50	9,70	11,00	7,60	7,60
100	13,90	17,10	11,10	11,10
200	20,50	24,10	15,80	15,80
400	30,70	35,00	22,70	22,70
800	46,40	56,00	31,80	31,80
1000	53,80	70,10	38,60	38,60
Min. bending radius				
(mm)	50	50	60	75

▼ STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
7	1000 m reel	ON REQUEST

Code	A22061 RG 59 Type	A22081 RG 11/U MIL-C-17/6B	A22101 RG 213/U MIL-C-17/74C	A22121 RG 174/U MIL-C-17/119F
▼ MANUFACTURING SPECIFICATIONS				
Inner Cond.	Cu	CuSn	Cu	FeCu
diam. (mm)	0,60	7x0,40	7x0,70	7x0,160
Dielectric	PE	PE	PE	PE
diam. (mm)	3,70	7,20	7,25	1,50
Shield:				
Braid	Cu	Cu	Cu	CuSn
Coverage	70%	95%	95%	85%
Jacket	PVC	PVC	PVC	PVC
Colour	BLACK	BLACK	BLACK	BLACK
diam. (mm)	6,10	10,30	10,30	2,80
▼ ELECTRICAL SPECIFICATIONS				
Impedance (Ω)	75±3	75±3	50±3	50±3
Capacitance (pF/m)	67±2	67±2	100±2	100±2
Velocity factor (%)	66	66	66	66
ATTENUATION				
MHz (dB/100 m)				
50	7,80	4,60	4,60	18,60
100	11,20	7,20	6,40	27,40
200	16,50	10,10	10,10	40,70
400	20,00	15,40	15,30	60,40
800	35,70	24,50	24,20	91,80
1000	40,80	27,20	27,40	95,40
Min. bending radius				
(mm)	60	100	100	30

▼ STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
7	1000 m reel	ON REQUEST

RoHS

CE

AMBRA90 A90 CAVI

SPECIAL CABLES DIVISION

TELECOMMUNICATION CABLES

- Unshielded twisted pair telephone cables
- Standard flat telephone cables
- Telephone exchange
- Video entry system cables

VIDEO ENTRY SYSTEM CABLES

GENERAL FEATURES

Traditional video entry system cables are composite cables consisting of power wires, control wires and a video signal wire, namely a coax cable. However, with digital technologies now being applied to video entry systems, a new species of "digital" cable has been developed. These cables are offered alongside the traditional cables in which video and control signals are transmitted using a twisted pair. AMBRA90 presents a selection of some of the most commonly used kinds of video-control cables favoured by the leading video entry system manufacturers. Sheaths are made from the same PVC-FR blend (flame retardant Italian standard CEI 20-22 II).

REFERENCE STANDARDS

- CEI EN 50363-0
- CEI 20-22 II
- CEI EN 60332-1-2
- CEI 20-37/0

SPECIFICATIONS

- Operating temperature range: -10° ÷ 70°C;
- Minimum conductor insulation resistance: 200 MΩ/Km;
- Test voltage: 2000 V;
- Working voltage: <= 50 V c.c. <= 75 V c.a.;
- Field of application: video entry systems;
- Use: fixed applications.

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
6	500 m reel	in stock
7	1000 m reel	ON REQUEST

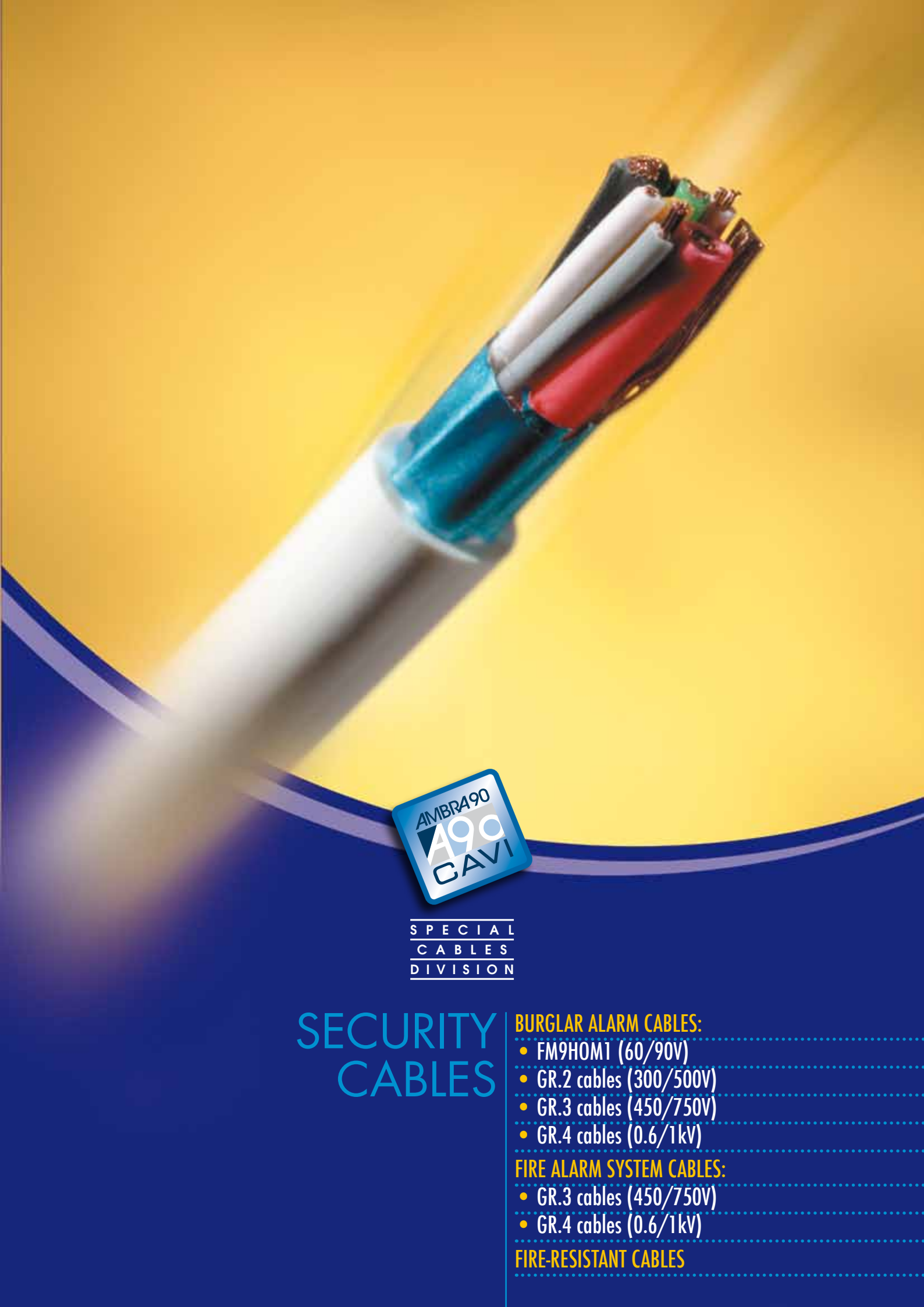
Code	A20361	A65216	A87401	A87391	A65386
MANUFACTURING SPECIFICATIONS					
Construction		2x1,50 +3x2x0,35	1x2x0,50	1x2x0,35	1x2x1,00
COAX CABLE					
Inner conductor (nxmm)	CuSn - 7x0,120	–	–	–	–
Dielectric (Ø mm)	PEG - 1,80	–	–	–	–
Shield (Coverage %)	CuSn - 77%	–	–	–	–
Sheath (Colour)	Black	–	–	–	–
Ø (mm)	2,90	–	–	–	–
CONDUCTORS:		Cu - 2x1,50	Cu - 2x0,50	Cu - 2x0,35	CuSn - 2x1,00
Insulation		PVC	PE	PVC	PE
Colour		Blue, Red	Brown, Brown-White	White, Blue	White, Blue
CONDUCTORS:		Cu - 3x2x0,35	–	–	–
Insulation		PVC	–	–	–
Colour		White-Brown, Brown, White-Green, Green, White-Orange, Orange,			
OUTER SHEATH:		PVC-FR	PVC-FR	PVC-FR	PVC-FR
Colour		Green	White	Grey	Yellow
Ø (mm)		9,30±0,20	4,80±0,20	6,00±0,20	6,60±0,20
Weight (kg/km)		114	28	50	56
Min. bending radius (mm)		120	60	70	80
ELECTRICAL SPECIFICATIONS					
Impedance (Ohm)	75±5	–	100±25	100±5	–
Capacitance (pF/m)	55	–	50	70	–
Velocity factor (%)	78	–	66	–	–
Wire R (Ohms/km)	231	–	–	–	–
Shield R (Ohms/km)	36	–	–	–	–
Attenuation (dB/100m)					
50 MHz	13,50	–	≤12	≤25	–
200 MHz	–	–	–	–	–
400 MHz	41,20	–	–	–	–
800 MHz	–	–	–	–	–
1000 MHz	69,60	–	–	–	–
WIRES					
Electrical Resists. (Ohms/km)		1,50 mm² - 13,0 0,35 mm² - 56,70	0,50 mm² - 35,50	0,35 mm² - 52,60	1,00 mm² - 19,00

VIDEO ENTRY SYSTEM CABLES

Code	A65396	A63026	A87361	A65046	A65246
▼ MANUFACTURING SPECIFICATIONS					
Construction	2x1,00 +2x0,30	Coax. +2x1,00 +3x0,34	1x2x1,00	RG59 B/U MIL +2x0,75	Minicoax +2x0,75 +2x0,22
COAX CABLE					
Inner conductor (nxmm)	–	Cu - 8x0,24	–	FeCu - 0,58	CuSn - 7x0,13
Dielectric (Ø mm)	–	PE - 2,45	–	PE - 3,70	PEE - 1,80
Shield (Coverage %)	–	Cu - Kf>70%	–	Cu - Kf>94%	CuSn - Kf>77%
Sheath (Colour)	–	PVC Nero	–	PVC Nero	PVC Nero
Ø (mm)	–	4,40±0,20	–	6,10±0,20	2,90±0,20
CONDUCTORS:	Cu - 2x1,00	Cu - 2x1,00	CuSn - 2x1,00	Cu - 2x0,75	Cu - 2x0,75
Insulation	PVC	PVC	PVC	PVC	PVC
Colour	Green, Red	Green, Red	Red, Black	White, Brown	Red, Black
CONDUCTORS:	Cu - 2x0,30	Cu - 2x0,34	–	–	Cu - 2x0,22
Insulation	PE	PVC	–	–	PVC
Colour	Blue, White-Blue	Violet, Light Blue, Pink	–	–	White, Brown
OUTER SHEATH:	PVC-FR	PVC-FR	PVC-FR	PVC-FR	PVC-FR
Colour	Yellow	White	Violet	Grey	Grey
Ø (mm)	8,40±0,20	8,80±0,20	6,20±0,20	9,70±0,20	7,00±0,20
Weight (kg/km)	98	116	50	134	70
Min. bending radius (mm)	95	100	70	120	85
▼ ELECTRICAL SPECIFICATIONS					
Impedance (Ohm)	100±20	50±3	100±20	75±3	75±3
Capacitance (pF/m)	50	100	50	67	61
Velocity factor (%)	66	66	–	66	82
Wire R (Ohms/km)	–	50,40	–	159,2	200
Shield R (Ohms/km)	–	23,50	–	8,5	36
Attenuation (dB/100m)					
50 MHz	–	9,70	–	7,60	14,20
200 MHz	–	19,70	–	15,80	28,90
400 MHz	–	28,20	–	22,70	42,80
800 MHz	–	40,70	–	31,80	64,60
1000 MHz	–	45,90	–	38,60	71,80
WIRES					
Electrical Resists. (Ohms/km)	1,00 mm^2 - 19,50 0,30 mm^2 - 65,00	1,00 mm^2 - 19,50 0,34 mm^2 - 57,00	1,00 mm^2 - 19,00	0,75 mm^2 - 26,00	0,75 mm^2 - 26,00 0,22 mm^2 - 100,00

VIDEO ENTRY SYSTEM CABLES

Code	A63006	A65116	A65126	A65136	A65076
▼ MANUFACTURING SPECIFICATIONS					
Construction	RG59 B/U MIL +2x1,00 +6x0,50	Minicoax +2x0,35	Minicoax +2x0,75	Minicoax +2x0,50 +8x0,25	RG59 B/U MIL +3x1,00 +9x0,50
COAX CABLE					
Inner conductor (nxmm)	FeCu - 0,58	CuSn - 7x0,13	CuSn - 7x0,13	CuSn - 7x0,13	FeCu - 0,58
Dielectric (Ø mm)	PE - 3,70	PEG - 1,80	PEG - 1,80	PEG - 1,80	PE - 3,70
Shield (Coverage %)	Cu - Kf>94%	CuSn - Kf>77%	CuSn - Kf>77%	CuSn - Kf>77%	Cu - Kf>94%
Sheath (Colour)	PVC Black	PVC Black	PVC Black	PVC Black	PVC Black
ø (mm)	6,10±0,20	2,90±0,20	2,90±0,20	2,90±0,20	6,10±0,20
CONDUCTORS:	Cu - 6x0,50	CuSn - 2x0,35	CuSn - 2x0,75	Cu - 2x0,50	Cu - 3x1,00
Insulation	PVC	PVC	PVC	PVC	PVC
Colour	White, Green, Yellow, Grey, Pink, Red	Red, Yellow	Red, Yellow	Black, Red	Blue, Red, Black
CONDUCTORS:	Cu - 6x0,35	–	–	Cu - 8x0,25	Cu - 9x0,50
Insulation	PVC	–	–	PVC	PVC
Colour	Black, Violet, Grey-Pink, Blue-Red, White-Green, Brown-Green	–	–	White, Green, Yellow, Brown, Pink, Orange, Blue, Violet	White, Green, Yellow, Brown, Pink, Orange, Light Blue, Violet, White-Green
OUTER SHEATH:	PVC-FR	PVC-FR	PVC-FR	PVC-FR	PVC-FR
Colour	Grey	Grey	Grey	Grey	Grey
ø (mm)	12,00±0,20	5,50±0,20	6,15±0,20	7,80±0,20	11,80±0,20
Weight (kg/km)	225	40	52	90	220
Min. bending radius (mm)	140	60	60	80	130
▼ ELECTRICAL SPECIFICATIONS					
Impedance (Ohm)	75±3	75±3	75±3	75±3	75±3
Capacitance (pF/m)	67	61	61	61	67
Velocity factor (%)	66	82	82	82	66
Wire R (Ohms/km)	159,2	200	200	200	159,2
Shield R (Ohms/km)	8,5	36	36	36	8,5
Attenuation (dB/100m)					
50 MHz	7,60	14,20	14,20	14,20	7,60
200 MHz	15,80	28,90	28,90	28,90	15,80
400 MHz	22,70	42,80	42,80	42,80	22,70
800 MHz	31,80	64,60	64,60	64,60	31,80
1000 MHz	38,60	71,80	71,80	71,80	38,60
WIRES					
Electrical Resists. (Ohms/km)	0,35 mm^2 - 56,70 0,50 mm^2 - 39,00	0,35 mm^2 - 56,70	0,75 mm^2 - 26,00	0,50 mm^2 - 39,00 0,22 mm^2 - 100,00	1,00 mm^2 - 19,00 0,50 mm^2 - 39,00



AMBRA90 CAVI

SPECIAL CABLES DIVISION

SECURITY CABLES

BURGLAR ALARM CABLES:

- FM9HOM1 (60/90V)
- GR.2 cables (300/500V)
- GR.3 cables (450/750V)
- GR.4 cables (0.6/1kV)

FIRE ALARM SYSTEM CABLES:

- GR.3 cables (450/750V)
- GR.4 cables (0.6/1kV)

FIRE-RESISTANT CABLES

ALARM CABLES FM9HOM1 (60/90V)

GENERAL FEATURES

Regulations and standards for security system cables became necessary with the use of said cables in heavily populated buildings and public places. Cables covered by experimental Italian standard CEI 46-76 are suitable for installation in dry or damp rooms, for fixed or mobile applications, either in view or in exposed or recessed ducts or in similar enclosed systems, and in places where there is a fire risk or with high occupancy.
The cables are suitable for supplying various security devices at extra-low voltage. They are not designed to be connected directly to the mains (power supply) or for low-impedance sources.
The rated working voltage for these cables (Uo/U) is 60/90 V c.a.

ELECTRICAL SPECIFICATIONS

Conductor section (mm²)	Test voltage (V)	Max. resistive unbalance at 20° (%)	Max. mutual capacitance (nF/km)	Max. capacitive unbalance (pF/km)	Max. conductor electrical resistance at 20°C (Ω/km)	Min. insulation resistance at 20°C (Ω/km)	Transfer impedance 1 MHz	Transfer impedance 10 MHz
0,22	1500	3,0	120	800	89,0	500	-	-
0,50	1500	3,0	120	800	39,0	500	100	200
0,75	2000	3,0	120	800	26,0	500	-	-

ELECTRICAL SPECIFICATIONS

- Flexible inner conductors in bare copper, concentric or bunch stranded;
- Conductor insulation made from M9 blend (CEI EN 50363-0);
- Twisting of signal and power conductors;
- Pairs twisted under Polyester (Pet) foil;
- Aluminium/Polyester (Al/Pet) foil shield with drain wire;
- Outer sheath made from flame-retardant M1 blend (CEI EN 50363-0) in White (RAL 9010);
- Operating temperature: -10°C to +70°C;
- Minimum bending radius is 10 times the outer diameter of the cable;

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST

FM9HOM1 cables (60/90 V) - To standard CEI 46-76

Code	Construction n° x mm²	max. outer Ø mm	Peso appross. Kg/Km	Sheath colour	Packaging
A43001	1 x 2 x 0,22	4,40	24		100 m coil
A43011	2 x 2 x 0,22	6,40	40		100 m coil
A43021	3 x 2 x 0,22	6,70	49		100 m coil
A43031	4 x 2 x 0,22	7,60	64		100 m coil
A43041	5 x 2 x 0,22	8,25	75		100 m coil
A43051	6 x 2 x 0,22	9,00	87		100 m coil
A43061	7 x 2 x 0,22	9,00	95		100 m coil
A43071	8 x 2 x 0,22	9,60	104		100 m coil
A43081	10 x 2 x 0,22	10,80	124		100 m coil
A43091	12 x 2 x 0,22	11,40	142		100 m coil
A43201	1 x 2 x 0,50	5,10	32		100 m coil
A43211	1 x 2 x 0,22 + 1 x 2 x 0,50	6,70	47		100 m coil
A43221	2 x 2 x 0,22 + 1 x 2 x 0,50	7,30	60		100 m coil
A43231	3 x 2 x 0,22 + 1 x 2 x 0,50	7,80	70		100 m coil
A43241	4 x 2 x 0,22 + 1 x 2 x 0,50	8,60	80		100 m coil
A43251	5 x 2 x 0,22 + 1 x 2 x 0,50	9,30	93		100 m coil
A43301	1 x 2 x 0,75	5,50	35		100 m coil
A43311	1 x 2 x 0,22 + 1 x 2 x 0,75	7,50	54		100 m coil
A43321	2 x 2 x 0,22 + 1 x 2 x 0,75	7,70	69		100 m coil
A43331	3 x 2 x 0,22 + 1 x 2 x 0,75	8,20	80		100 m coil
A43341	4 x 2 x 0,22 + 1 x 2 x 0,75	8,80	88		100 m coil
A43351	5 x 2 x 0,22 + 1 x 2 x 0,75	9,50	98		100 m coil

ALARM CABLES GR.2 - GR.3 - GR.4

GENERAL FEATURES

- GR.2 alarm cables with standard insulation (300/500 V);
- GR.3 alarm cables with reinforced insulation (450/750 V);
- GR.4 alarm cables with insulation (0.6/1 kV);

These cables feature shielding produced with Al/Pet foil (Kf ≥100%) wrapped helically around the conductors, a drain wire, and are protected by a PVC-FR outer sheath (flame retardant CEI 20-22 II) in white.
Cables with a grade 3 insulation build have a sheath thickness sufficient to withstand a test voltage of 3kV, which means they can be installed in the same ducts carrying power cables with a voltage of 220V or 380V (CEI 64-8).

REFERENCE STANDARDS

- CEI 46-5
- CEI-UNEL 00724
- CEI 20-22 II
- CEI EN 60332-1
- CEI EN 60332-2
- CEI 20-37/0

ELECTRICAL SPECIFICATIONS

Sezione	Tensione di prova V	Tensione di esercizio V	Resistenza elettrica dei conduttori Ω/km	Resistenza min. di isolamento MΩ/km	Intensità max di corrente A
0,22	1000	<= 50 V c.c., <= 75 V c.a.	100	200	2,5
0,50	1200	<= 50 V c.c., <= 75 V c.a.	39	200	6,0
0,75	2000	<= 50 V c.c., <= 75 V c.a.	26	200	10,0

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in bare copper;
- Inner conductors insulated with PVC sheath. Colour coding according to DIN 47100 standard;
- Migration-resistant polyester (Pet) foil wrapped helically around conductors;
- Bare copper drain wire;
- Shielding with Aluminium/Polyester (Al/Pet) foil, wrapped helically;
- Flame-retardant PVC outer sheath;
- Operating temperature range: -10°C to +70°C;
- Minimum bending radius is 10 times the outer diameter of the cable;
- Field of application: burglar alarm systems and all security systems in general;
- Use: fixed applications.

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
6	500 m reel	ON REQUEST

GR.2 (300/500V)

Code	Construction n° x mm²	max. outer Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A40001	2 x 0,22	3,30	18	□□□□	100 m coil
A40011	4 x 0,22	3,80	25	□□□□	100 m coil
A40021	6 x 0,22	4,30	32	□□□□	100 m coil
A40031	8 x 0,22	5,00	41	□□□□	100 m coil
A40041	10 x 0,22	5,50	48	□□□□	100 m coil
A40201	2 x 0,50 + 2 x 0,22	4,50	35	□□□□	100 m coil
A40221	2 x 0,50 + 4 x 0,22	5,00	42	□□□□	100 m coil
A40241	2 x 0,50 + 6 x 0,22	5,50	51	□□□□	100 m coil
A40251	2 x 0,50 + 8 x 0,22	6,10	58	□□□□	100 m coil
A40401	2 x 0,75 + 2 x 0,22	5,10	44	□□□□	100 m coil
A40411	2 x 0,75 + 4 x 0,22	5,50	52	□□□□	100 m coil
A40421	2 x 0,75 + 6 x 0,22	5,70	58	□□□□	100 m coil
A40431	2 x 0,75 + 8 x 0,22	6,60	69	□□□□	100 m coil

RoHS

GR.3 (450/750V)

Code	Construction n° x mm²	max. outer Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A4100**1**	2 x 0,22	3,70	24	□□□□	100 m coil
A4101**1**	4 x 0,22	4,20	32	□□□□	100 m coil
A4102**1**	6 x 0,22	4,70	38	□□□□	100 m coil
A4103**1**	8 x 0,22	5,40	48	□□□□	100 m coil
A4104**1**	10 x 0,22	5,90	56	□□□□	100 m coil
A4120**1**	2 x 0,50 + 2 x 0,22	4,90	40	□□□□	100 m coil
A4122**1**	2 x 0,50 + 4 x 0,22	5,40	48	□□□□	100 m coil
A4124**1**	2 x 0,50 + 6 x 0,22	5,90	56	□□□□	100 m coil
A4125**1**	2 x 0,50 + 8 x 0,22	6,50	68	□□□□	100 m coil
A4140**1**	2 x 0,75 + 2 x 0,22	5,60	54	□□□□	100 m coil
A4141**1**	2 x 0,75 + 4 x 0,22	6,00	58	□□□□	100 m coil
A4142**1**	2 x 0,75 + 6 x 0,22	6,20	60	□□□□	100 m coil
A4143**1**	2 x 0,75 + 8 x 0,22	7,10	75	□□□□	100 m coil

GR.4 (0,6/1kV)

Code	Construction n° x mm²	max. outer Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A4200**1**	2 x 0,22	5,30	38	□□□□	100 m coil
A4201**1**	4 x 0,22	5,70	47	□□□□	100 m coil
A4202**1**	6 x 0,22	6,30	57	□□□□	100 m coil
A4203**1**	8 x 0,22	6,80	67	□□□□	100 m coil
A4220**1**	2 x 0,50 + 2 x 0,22	6,30	58	□□□□	100 m coil
A4222**1**	2 x 0,50 + 4 x 0,22	6,80	67	□□□□	100 m coil
A4224**1**	2 x 0,50 + 6 x 0,22	7,10	76	□□□□	100 m coil
A4225**1**	2 x 0,50 + 8 x 0,22	7,70	85	□□□□	100 m coil
A4240**1**	2 x 0,75 + 2 x 0,22	6,90	69	□□□□	100 m coil
A4241**1**	2 x 0,75 + 4 x 0,22	7,10	77	□□□□	100 m coil
A4242**1**	2 x 0,75 + 6 x 0,22	7,30	84	□□□□	100 m coil
A4243**1**	2 x 0,75 + 8 x 0,22	8,10	95	□□□□	100 m coil

SENSOR CONNECTION CABLES

GENERAL FEATURES

Fire alarm system cables with GR.3 insulation (450/750V) and GR.4 insulation (0.6/1kV); feature shielding produced with Al/Pet foil (Kf ≥100%) wrapped helically around the cores, a drain wire, and are protected by a PVC-FR outer sheath (flame retardant CEI 20-22 II) in Red (RAL 3018).

REFERENCE STANDARDS

- CEI EN 60228 Cl.5
- CEI 20-22 II
- CEI EN 60332-1-2
- CEI 20-37/0
- CEI 64-8
- CEI EN 50363-0

ELECTRICAL SPECIFICATIONS

Section mm²	Test voltage V	Working voltage V	Electrical resistance of wires Ω/km	Operating temperature range
0,50	1500	<= 50 V c.c., <= 75 V c.a.	39	-10°C ÷ +70°C
1,00	2000	<= 50 V c.c., <= 75 V c.a.	19	-10°C ÷ +70°C
1,50	2000	<= 50 V c.c., <= 75 V c.a.	12	-10°C ÷ +70°C

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in bare copper;
- Inner conductors insulated with flame-retardant PVC. Colours Black, Red;
- Migration-resistant polyester (Pet) foil wrapped helically around cores;
- Bare copper drain wire;
- Shielding with Aluminium/Polyester (Al/Pet) foil, wrapped helically;
- Flame-retardant PVC-FR outer sheath in Red (RAL 3018);
- Minimum bending radius is 10 times the outer diameter of the cable;
- Field of application: fire alarm systems;
- Use: fixed applications.

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
7	500 m reel	ON REQUEST

GR.3 (450/750V)

Code	Construction n° x mm²	max. outer Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A4910**1**	2 x 0,50	5,20	29	■■■■	100 m coil
A4912**1**	2 x 1,00	6,00	43	■■■■	100 m coil
A4913**1**	2 x 1,50	7,20	59	■■■■	100 m coil
A4914**1**	2 x 2,50	8,40	104	■■■■	100 m coil

GR.4 (0,6/1kV)

Code	Construction n° x mm²	max. outer Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A4922**1**	2 x 1,00	6,80	65	■■■■	100 m coil
A4923**1**	2 x 1,50	8,00	88	■■■■	100 m coil
A4924**1**	2 x 2,50	8,80	110	■■■■	100 m coil

RoHS

CE

FIRE-RESISTANT CABLES

UG40HM1 (450/750V) - 90 min. at 750°C

GENERAL FEATURES

In the event of an emergency, for example a fire, some devices must continue to work to ensure the safety of people and limit damage to premises. This is why cables with good thermal resistance are necessary to safeguard the transmission of signals and power. To obtain this result, the cables are manufactured using materials such as ceramifiable silicone rubber.

REFERENCE STANDARDS

- CEI EN 50363-0
- CEI EN 60228
- CEI 20-37 -2-6-7
- CEI 20-22 III Cat.C
- CEI EN 60332-1-2
- CEI 20-36

ELECTRICAL SPECIFICATIONS

Section mm²	Test voltage V	Working voltage V	Conductor electrical resistance Ω/km
1,50	2000	450/750	12,10

MANUFACTURING SPECIFICATIONS

- Red copper inner conductor, single wire: 1.50 mm²;
- Inner conductor insulation in ceramifiable silicone rubber;
- Shield in Aluminium/Polyester (Al/Pet) foil;
- Tinned copper drain wire;
- Migration-resistant polyester (Pet) foil;
- Outer sheath in flame-retardant, red M1 blend (CEI 20-11);
- Operating temperature: -30°C to +80°C;
- Minimum bending radius is 10 times the diameter of the cables;
- Use: fixed applications.

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
6	500 m reel	ON REQUEST
7	1000 m reel	in stock

Code	Conductor construction n° x mm²	Outer nom. Ø max.	Sheath Colour	Packaging
A48606	2 x 1,50	8,60	■■■■	500 m reel

FIRE-RESISTANT CABLES

FTG100M1 (0,6/1kV) - 3 hour at 750°C

GENERAL FEATURES

Power, signal and control cable with insulation in a flame-retardant elastomer blend, with zero halogens. Conductors are protected with a fire-resistant barrier composed of a glass/mica tape. The sheath is also made from a flame-retardant elastomer blend and has zero halogens. Cables are suitable to power emergency devices in premises at risk of fire (safety lighting, smoke alarms, fire hydrants etc.)

REFERENCE STANDARDS

- CEI EN 60228 Cl.5
- CEI UNEL 00722
- CEI 20-22 III cat.C
- CEI EN 60332-1-2
- CEI 20-37 CEI EN 50267 CEI EN 61034
- CEI 20-36/2-1
- CEI 20-36 CEI EN 50200
- CEI 20-45

ELECTRICAL SPECIFICATIONS

Section mm²	Test voltage V	Working voltage V	Electrical resistance of the wires Ω/km	Min. resistance of insulation Mohms/km	Max.intensity of current A
1,50	4000	0.6/1kV	12.00	20	20,0
2,50	4000	0.6/1kV	8.00	20	26,0

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in bare copper;
- Flameproof barrier in glass/mica tape around conductor. Characteristic temperature 750°C;
- Conductor insulation in G10 elastomer blend;
- CEI UNEL 00722 Standard colouring of cores;
- Blue M1 type outer sheath (CEI 20-11).

STANDARD PACKAGING

- Operating temperature: -25°C +90°C;
- Storage temperature: -30°C +80°C;
- Minimum bending ratio: 10 times the outer diameter of the cable;
- Field of application: emergency devices;
- Use: fixed applications.

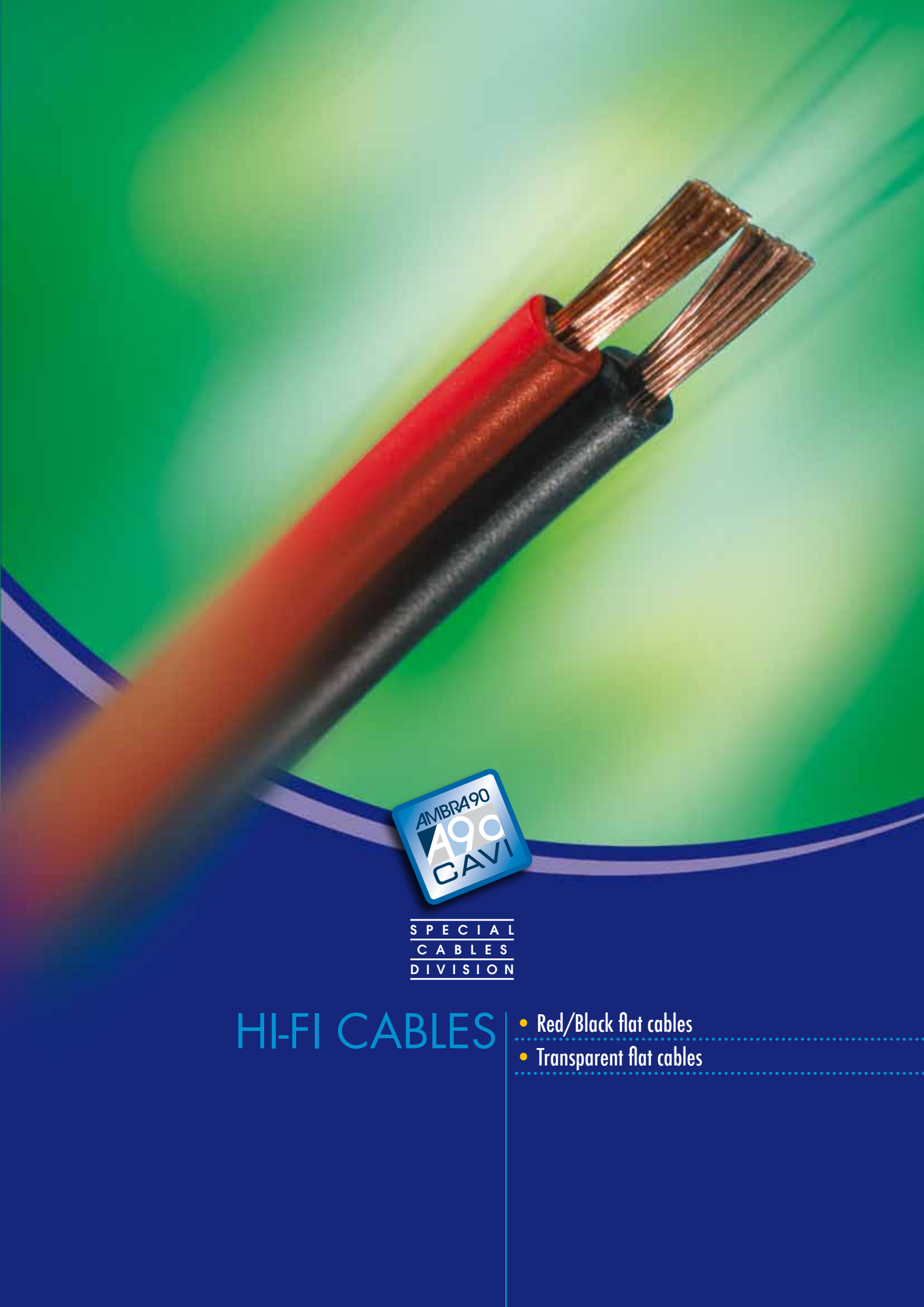
STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
6	500 m reel	ON REQUEST
7	1000 m reel	in stock

Code	Conductor construction n° x mm²	Outer nom. Ø max.	Sheath Colour	Packaging
A47607	2 x 1.50	11.80		1000 m reel
A47617	3 G 1.50	12.20		1000 m reel
A47707	2 x 2.50	12.70		1000 m reel
A47717	3 G 2.50	13.20		1000 m reel

RoHS

CE



AMBRA90 CAVI

SPECIAL CABLES DIVISION

HI-FI CABLES

- Red/Black flat cables
- Transparent flat cables

HI-FI CABLES

GENERAL FEATURES

These dual conductor flat cables are now mostly used in the HI-FI sector, especially in acoustic speaker connections. AMBRA90 produces a range of flat cables with a black, soft sheath with a red side, as well as a transparent, soft sheath range with conductors identified with the use of red and tin-plated copper.

MANUFACTURING/ELECTRICAL SPECIFICATIONS

N. cond. x sec. n x mm²	Approx weight kg/km	Size (HxL) mm	Minimum bending radius mm	Conductor electr. resistance radius mm Ω/Km	Capacitance pF/m
2 x 0.50	16	2.10 x 4.20	30	48.6	56.4
2 x 0.75	21	2.30 x 4.60	35	29.7	60.8
2 x 1.00	27	2.50 x 5.00	38	21.9	70.0
2 x 1.50	37	2.90 x 5.80	42	14.6	73.2
2 x 2.50	58	3.50 x 7.00	50	8.45	65.0

STANDARD PACKAGING

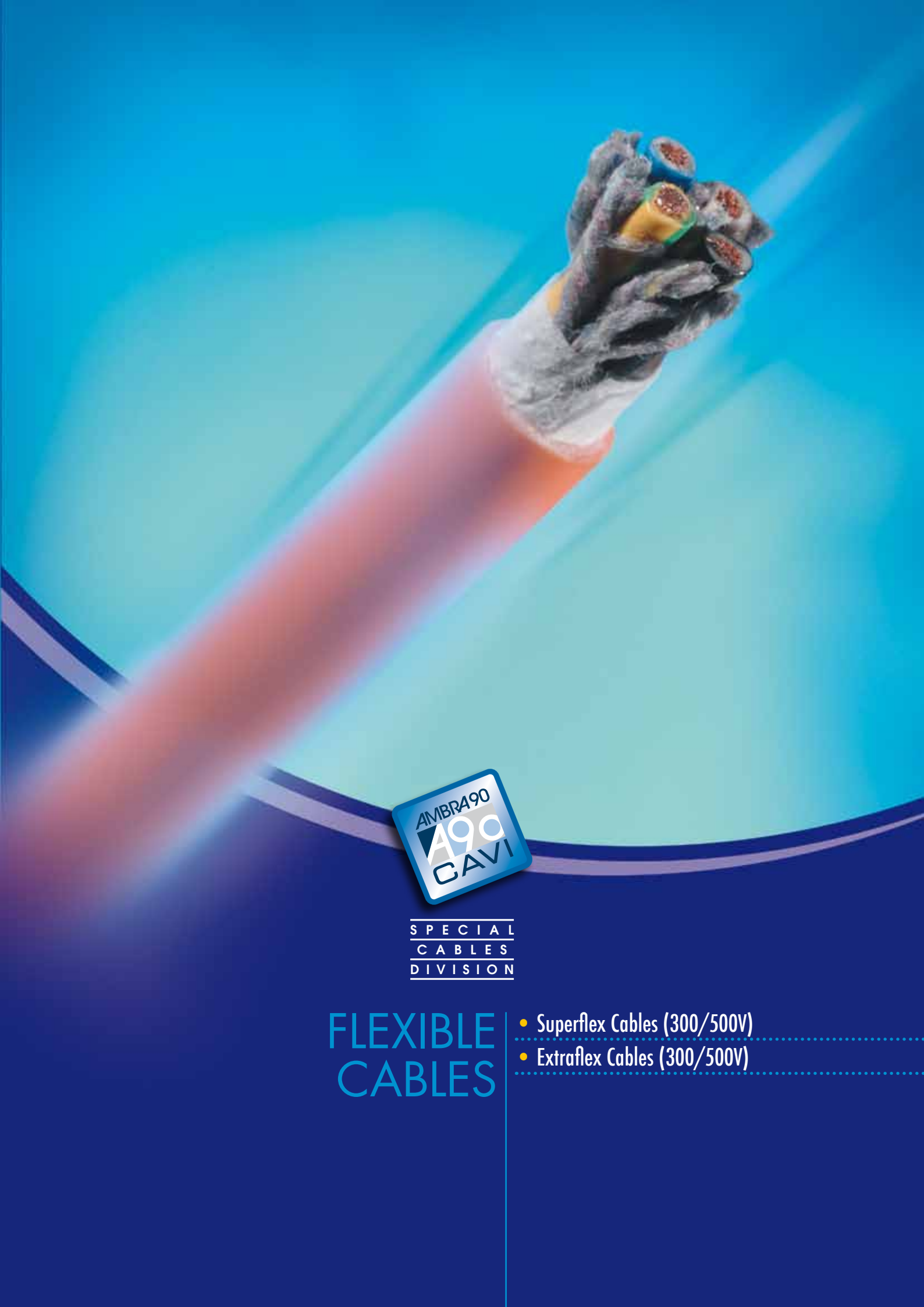
Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
7	1000 m reel	ON REQUEST

Red/Black flat cables

Code	Conductor construction n° x mm²	Type	Sheath	Sheath colour	Packaging
A30011	2 x 0.50	Cu	PVC		100m coil
A30021	2 x 0.75	Cu	PVC		100m coil
A30031	2 x 1.00	Cu	PVC		100m coil
A30041	2 x 1.50	Cu	PVC		100m coil
A30051	2 x 2.50	Cu	PVC		100m coil

Transparent flat cables

Code	Conductor construction n° x mm²	Type	Sheath	Sheath colour	Packaging
A32001	2 x 0.50	Cu - CuSn	PVC		100m coil
A32011	2 x 0.75	Cu - CuSn	PVC		100m coil
A32021	2 x 1.00	Cu - CuSn	PVC		100m coil
A32031	2 x 1.50	Cu - CuSn	PVC		100m coil
A32041	2 x 2.50	Cu - CuSn	PVC		100m coil



AMBRA90 CAVI

SPECIAL CABLES DIVISION

FLEXIBLE CABLES

- Superflex Cables (300/500V)
- Extraflex Cables (300/500V)

SUPERFLEX CABLES (300/500V)

GENERAL FEATURES

These types of cables with their remarkable flexibility, resulting from the type of conductor used, allow for very tight twisting. The special type of blend used for the sheath makes this type of cable suitable for connecting portable devices, tool extensions, household appliances and electrical leisure and gardening equipment.

REFERENCE STANDARDS

- CEI EN 60228 Cl.6
- CEI 20-20
- CEI - UNEL 00722

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in Class 5 bare copper;
- Conductor insulation in PVC. Colour compliant with standard: CEI-UNEL 00722;
- Outer sheath in an orange, PVC-based blend (RAL 2003).

TECHNICAL SPECIFICATIONS

- Operating temperature range: -10°C ÷ +70°C;
- Minimum bending radius: is 10 times the outer diameter of the cables;
- Use: mobile applications.

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
7	1000 m reel	ON REQUEST

Code	Conductor construction n° x mm2	Outer nom. Ø mm	Copper weight kg/km	Sheath Colour	Packaging
A34601	2 x 1.00	6.90	71		100 m coil
A34611	3 G 1.00	7.20	83		100 m coil
A34701	2 x 1.50	7.80	93		100 m coil
A34711	3 G 1.50	8.50	119		100 m coil
A34811	3 G 2.50	10.20	181		100 m coil

EXTRAFLEX CABLES (300/500V)

GENERAL FEATURES

These types of cables with their remarkable flexibility, resulting from the type of conductor used, allow for very tight twisting. The use of cotton fillers and the special blend used for the sheath ensure this type of cable is suitable for heavy building site work and for connecting portable devices, tool extensions, household appliances and electrical leisure and gardening equipment. These cables show good resistance to hydrocarbons and abrasion. They can also be used in cable carriers, even for high-speed cycles.

REFERENCE STANDARDS

- CEI EN 60228 Cl.6
- CEI 20-20
- CEI - UNEL 00722

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in Class 6 bare copper;
- Conductor insulation in PVC. Colour compliant with standard: CEI-UNEL 00722;
- Fillers in yarn waste to ensure greater flexibility;
- Outer sheath in an orange polyurethane-based blend (RAL 2003).

TECHNICAL SPECIFICATIONS

- Operating temperature range: -20°C ÷ +80°C;;
- Minimum bending radius: is 7.5 times the outer diameter of the cables;
- Oil resistance: good;
- Resistance to chemicals: good for acids and solvents;
- Use: mobile applications.

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
7	1000 m reel	ON REQUEST

Code	Conductor construction n° x mm²	Outer nom. Ø mm	Copper weight kg/km	Sheath Colour	Packaging
A33001	2 x 0.75	6.60	55		100 m coil
A33011	3 G 0.75	7.50	66		100 m coil
A33101	2 x 1.00	7.10	64		100 m coil
A33111	3 G 1.00	8.00	77		100 m coil
A33201	2 x 1.50	8.20	89		100 m coil
A33211	3 G 1.50	8.90	112		100 m coil
A33221	4 G 1.50	10.20	144		100 m coil
A33301	2 x 2.50	9.90	124		100 m coil
A33311	3 G 2.50	10.30	168		100 m coil
A33321	4 G 2.50	11.40	210		100 m coil

AMBRA90 A90 CAVI

SPECIAL CABLES DIVISION

PHOTOVOLTAIC SYSTEM CABLES

The Ambra 90 Special Cables Division, with its Soleasy brand, offers a comprehensive range of products for producing photovoltaic systems.

PHOTOVOLTAIC SYSTEM CABLES

NEW

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in tinned copper Class 5;
- EI3 cross-linked thermoplastic elastomer insulation;
- Sheath made from halogen-free cross-linked thermoplastic elastomer M2 blend;
- Sheath colour: Black (RAL 9005) - Red (RAL 3018) - Blue (RAL 5015).

SPECIFICATIONS

- Operating temperature: - 40°C to +120°C;
- Rated voltage: Uo/U AC 0.6/1kV - Uo/U DC 0.9/1.5kV:
- Max. short-circuit temp.: 250°C on conductor (max. 5 seconds)
- Test voltage: 4kV
- Insulation resistance: > 750 MΩ x Km a 20°C
- Min. installation temperature: -25°C
- Max. tension during installation: 50 N/mm²
- Min. bending radius: 6 x diam. esterno
- Electrical resistance of wires: 4,0 mm² 5,09 Ω/km - 6,0 mm² 3,39 Ω/km

REFERENCE STANDARDS

- CEI EN 60228 Cl.5 (conductor size - electrical resistance)
- CEI EN 60332-1-2 (test for vertical flame propagation)
- IEC 60754-1 CEI EN 50267-2-1 (halogen acid gas emission)
- IEC 60754-2 CEI EN 50267-2-2/3 (corrosive gases evolved during combustion)
- CEI EN 61034-2 (density of smoke generated during combustion)
- IEC 60216 (cable endurance)

Code	Construction n° x mm²	max. outer Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A12261	1x4,0	6,0	75	■■■■	100m coil
A12271	1x4,0	6,0	75	■■■■	100m coil
A12281	1x4,0	6,0	75	■■■■	100m coil
A12291	1x6,0	7,0	103	■■■■	100m coil
A12301	1x6,0	7,0	103	■■■■	100m coil
A12311	1x6,0	7,0	103	■■■■	100m coil
A12801	1x10	8,0	160	■■■■	100m coil
A12851	1x16	10,0	250	■■■■	100m coil

REFERENCE STANDARDS

Cifra finale del codice	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

Black colour available on stock; red or blue colour on demand.

AMBRA90 A90 CAVI

SPECIAL CABLES DIVISION

CONTROL AND SIGNAL CABLES

- FROR (300/500)
- FROR (0.6/1 kV)
- FROHH2R (450/750 V)
- FG70H2R (0.6/ 1 kV)

RoHS

CE

FROR CABLES (300/500V)

GENERAL FEATURES

This category of cables is used to connect control, measuring and signal equipment, and whenever there is a need to transmit signals that are not affected by electromagnetic interference in the surrounding environment.

REFERENCE STANDARDS

- CEI EN 60228 Cl.5
- CEI 20-22 II
- CEI EN 60332-1-2
- CEI 20-37/0
- DIN 47100

ELECTRICAL SPECIFICATIONS

Section mm²	Test voltage V	Working voltage V	Electrical resistance of wires Ω/km
0,50	2000	300/500	39,0

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in red copper;
- Conductors insulated with PVC. Colour coding according to DIN 47100 standard;
- PVC-FR outer sheath in GREY (RAL 7035) (CEI 20-22 II);
- Operating temperature -10°C to +70°C;
- Minimum bending radius is 10 times the diameter of the cable;
- Use: fixed applications.

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

Code	Construction n° x mm²	Outer nom. Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A7140**1**	2 x 0,50	4,20	29,0		100 m coil
A7141**1**	3 x 0,50	4,40	35,0		100 m coil
A7142**1**	4 x 0,50	4,90	42,0		100 m coil
A7143**1**	6 x 0,50	6,00	63,0		100 m coil
A7144**1**	8 x 0,50	6,60	75,0		100 m coil
A7145**1**	10 x 0,50	7,50	97,0		100 m coil
A7146**1**	12 x 0,50	7,60	107,0		100 m coil
A7147**1**	14 x 0,50	8,10	121,0		100 m coil
A7148**1**	16 x 0,50	8,60	134,0		100 m coil
A7149**1**	18 x 0,50	9,30	156,0		100 m coil
A7150**1**	20 x 0,50	10,00	173,0		100 m coil
A7151**1**	22 x 0,50	10,50	195,0		100 m coil

BLUE FROR CABLES FOR EXTERIOR USE (0.6/1KV)

NEW

GENERAL FEATURES

This category of cables is used to connect control, measuring and signal equipment, and whenever there is a need to transmit signals that are not affected by electromagnetic interference in the surrounding environment in applications outside buildings.

REFERENCE STANDARDS

- CEI EN 60228 Cl.5
- CEI 20-22 II
- CEI EN 60332-1-2
- CEI 20-37/0
- DIN 47100

ELECTRICAL SPECIFICATIONS

Section mm²	Test voltage V	Working voltage V	Electrical resistance of wires Ω/km
0,50	4000	0,6/1000	39,0

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in red copper;
- Conductors insulated with PVC. Colour coding according to DIN 47100 standard ;
- PVC-FR outer sheath in BLUE (RAL 5015) (CEI 20-22 II);
- Operating temperature -10°C to +70°C;
- Minimum bending radius is 10 times the diameter of the cable;
- Use: fixed applications outdoors.

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

Code	Construction n° x mm²	Outer nom. Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A7180**1**	2 x 0,50	5,10	32,0		100 m coil
A7181**1**	3 x 0,50	5,20	43,0		100 m coil
A7182**1**	4 x 0,50	5,80	52,0		100 m coil
A7183**1**	6 x 0,50	6,80	74,0		100 m coil
A7184**1**	8 x 0,50	7,60	88,0		100 m coil
A7185**1**	10 x 0,50	8,20	106,0		100 m coil
A7186**1**	12 x 0,50	8,50	120,0		100 m coil

RoHS

CE

FROHH2R CABLES (450/750V)

RoHS

CE

GENERAL FEATURES

The complexity of control boards combined with the type and vast array of signals in question together demand the use of shielded cables that are suitably designed to protect the signal from the electromagnetic interference that is inevitably found in environments of this kind. AMBRA90 presents a line of multi-core cables for fixed applications with a double shield: Al/Pet foil with coverage (Kf) = 100% and bare copper braid with coverage (Kf) > 70%. The sheath is a flame-retardant PVC-FR compound (Italian standard CEI 20-22 II).

ELECTRICAL SPECIFICATIONS

Section mm²	Test voltage (V)	Working voltage (V)	Electrical resistance of wires Ω/Km	Min. insulation resistance MΩ/Km	Max. current intensity A	Capacitance C1 (pF/m)	Capacitance C2* (pF/m)
0,50	2000	450/750	39,00	20	6,0	120	250
0,75	2000	450/750	26,00	20	12,5	130	310
1,00	2000	450/750	19,00	20	16,0	130	340
1,50	2000	450/750	12,00	20	20,0	130	360
2,50	2000	450/750	8,00	20	26,0	130	370
4,00	3000	450/750	4,95	20	35,0	140	380
6,00	3000	450/750	3,30	20	44,0	150	390

C1: capacitance between conductors
C2: capacitance between a conductor and the shield

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
7	1000 m reel	ON REQUEST

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in bare copper;
- Conductors insulated with PVC. Core colour coding:
  - according to DIN 47100 standard for 0.50 and 0.75 mm² sections;
  - according to CEI UNEL 00722 standard for sections from 1.0 to 6.0 mm²;
- Polyester separating foil wrapped helically around conductors;
- Shield consisting of Al/Pet foil and bare copper braid with coverage (Kf) > 70%;
- PVC-FR outer sheath in GREY (RAL 7035) (CEI 20-22 II).

SPECIFICATIONS

- Operating temperature range: -10°C ÷ +70°C;
- Storage temperature range: -30°C ÷ +70°C;
- Minimum bending radius: 10 times the outer diameter of the cable;
- Field of application: in industrial environments in measuring and control systems;
- Use: fixed applications.

REFERENCE STANDARDS

- CEI EN 60228 Cl.5
- DIN 47100
- CEI UNEL 00722
- CEI 20-22 II
- CEI EN 60332-1-2
- CEI 20-37/0

FROHH2R (450/750V)

Code	Construction n° x mm²	Outer nom. Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A70211*	2 x 0,50	5,20	36		100 m coil
A70221*	3 x 0,50	5,50	44		100 m coil
A70231*	4 x 0,50	6,30	59		100 m coil
A70241	5 x 0,50	6,70	67		100 m coil
A70251	6 x 0,50	7,20	77		100 m coil
A70261	7 x 0,50	7,20	84		100 m coil
A70271	8 x 0,50	8,00	95		100 m coil
A70281	10 x 0,50	9,20	121		100 m coil
A70291	12 x 0,50	9,50	137		100 m coil
A70311*	2 x 0,75	5,80	44		100 m coil
A70321*	3 x 0,75	6,50	62		100 m coil
A70331*	4 x 0,75	7,00	74		100 m coil
A70341	5 x 0,75	7,50	88		100 m coil
A70351	6 x 0,75	8,10	101		100 m coil
A70361	7 x 0,75	8,10	111		100 m coil
A70371	8 x 0,75	9,30	135		100 m coil
A70381	10 x 0,75	10,40	160		100 m coil
A70391	12 x 0,75	11,10	194		100 m coil
A70411*	2 x 1,00	6,10	52		100 m coil
A70421*	3 G 1,00	6,70	70		100 m coil
A70431*	4 G 1,00	7,50	85		100 m coil
A70441	5 G 1,00	7,80	101		100 m coil
A70451	6 G 1,00	8,50	118		100 m coil
A70461	7 G 1,00	9,10	130		100 m coil
A70471	8 G 1,00	9,70	157		100 m coil
A70481	10 G 1,00	10,80	186		100 m coil
A70491	12 G 1,00	11,50	225		100 m coil
A70511*	2 x 1,50	7,60	76		100 m coil
A70521*	3 G 1,50	8,00	97		100 m coil
A70531*	4 G 1,50	8,90	130		100 m coil
A70541	5 G 1,50	9,80	164		100 m coil
A70551	6 G 1,50	10,70	200		100 m coil
A70561	7 G 1,50	11,70	225		100 m coil
A70571	8 G 1,50	12,10	260		100 m coil
A70587	10 G 1,50	13,40	300		100 m coil
A70597	12 G 1,50	13,80	340		100 m coil
A70611	2 x 2,50	8,80	110		100 m coil
A70621	3 G 2,50	9,90	140		100 m coil
A70631	4 G 2,50	10,20	176		100 m coil
A70641	5 G 2,50	11,20	230		100 m coil
A70657	6 G 2,50	12,10	275		100 m coil
A70667	7 G 2,50	13,10	320		100 m coil
A70677	8 G 2,50	13,60	340		100 m coil
A70687	10 G 2,50	15,20	410		100 m coil
A70697	12 G 2,50	15,90	470		100 m coil
A70701	2 x 4,00	10,80	176		100 m coil
A70717	3 G 4,00	11,60	220		100 m coil
A70727	4 G 4,00	12,70	274		100 m coil
A70737	5 G 4,00	14,20	340		100 m coil
A70807	2 x 6,00	12,70	248		100 m coil
A70817	3 G 6,00	13,70	310		100 m coil
A70827	4 G 6,00	15,10	390		100 m coil
A70837	5 G 6,00	16,70	503		100 m coil

(*) In stock

RoHS

CE

FG70H2R CABLES (0.6/1KV)

RoHS

CE

GENERAL FEATURES

For carrying electricity and transmitting signals indoors or out, even in damp environments. For fixed applications in free air, ducts or raceways, on walls and metal structures or suspended. Also suitable for laying underground.

ELECTRICAL SPECIFICATIONS

Section mm²	Test voltage (V)	Working voltage (V)	Electrical resistance of wires Ω/km	Min. insulation resistance MΩ/km	Max. current intensity A	Capacitance C1 (pF/m)	Capacitance C2*(pF/m)
1,50	4000	0,6/1kV	12,00	20	20,0	130	360
2,50	4000	0,6/1kV	8,00	20	26,0	130	370
4,00	4000	0,6/1kV	4,95	20	35,0	140	380
6,00	4000	0,6/1kV	3,30	20	44,0	150	390

C1: capacitance between conductors
C2: capacitance between a conductor and the shield

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
7	1000 m reel	ON REQUEST

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in bare copper;
- Conductors insulated with G7 silane elastomer;
- Core colour coding according to Italian standard CEI UNEL 00722;
- Polyester separating foil wrapped helically around conductors;
- Shield consisting of bare copper braid with coverage (Kf) > 70%;
- PVC-FR outer sheath in GREY (RAL 7035) (CEI 20-22 II).

SPECIFICATIONS

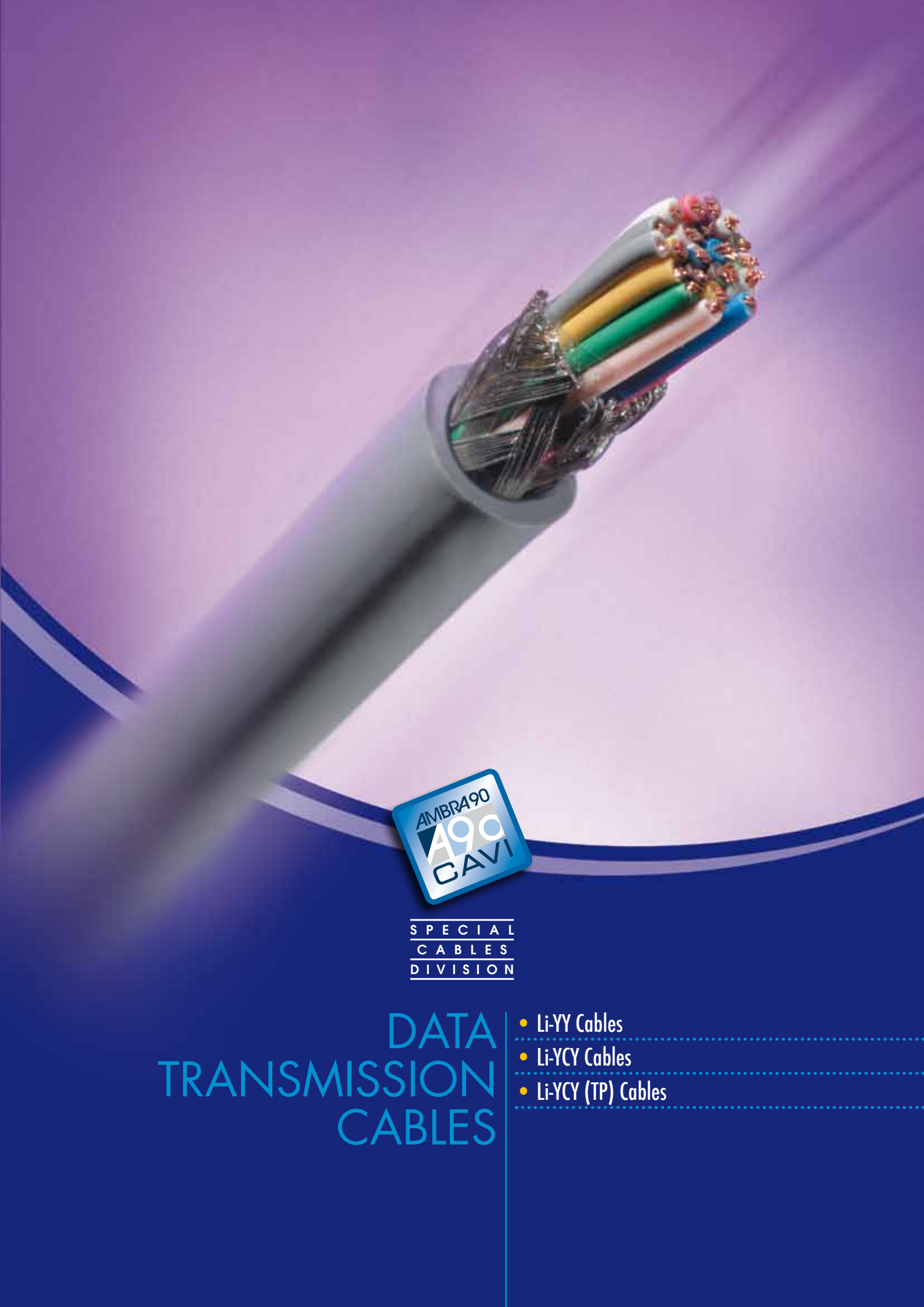
- Operating temperature: -10°C ÷ +80°C;
- Storage temperature: -30°C ÷ +80°C;
- Minimum bending radius: 8 times the outer diameter of the cable;
- Field of application: in industrial environments in measuring and control systems;
- Use: fixed applications.

REFERENCE STANDARDS

- CEI EN 60228 Cl.5
- CEI UNEL 00722
- CEI 20-22 II
- CEI EN 60332-1-2
- CEI 20-37/0

Code	Construction n° x mm²	Outer nom. Ø mm	Approx. weight kg/km	Sheath colour	Packaging
A75701*	2 x 1,50	10,0	120		100 m coil
A75711*	3 G 1,50	10,5	142		100 m coil
A75721	4 G 1,50	11,3	178		100 m coil
A75731	5 G 1,50	12,2	226		100 m coil
A75801*	2 x 2,50	11,1	152		100 m coil
A75811*	3 G 2,50	11,6	193		100 m coil
A75827	4 G 2,50	12,6	230		100 m coil
A75837	5 G 2,50	13,7	302		100 m coil
A75907	2 x 4,00	12,4	230		100 m coil
A75917	3 G 4,00	13,0	285		100 m coil
A75927	4 G 4,00	14,2	343		100 m coil
A75937	5 G 4,00	14,5	350		100 m coil
A75957	2 x 6,00	13,8	311		100 m coil
A75967	3 G 6,00	14,5	360		100 m coil
A75977	4 G 6,00	16,1	420		100 m coil
A75987	5 G 6,00	17,4	560		100 m coil

(*) In stock



AMBRA90 CAVI

SPECIAL CABLES DIVISION

DATA TRANSMISSION CABLES

- Li-YY Cables
- Li-YCY Cables
- Li-YCY (TP) Cables

LI-YY • LI-YY-OZ CABLES

GENERAL FEATURES

Flexible cables for data transmission used for process control on industrial appliances, electronic devices, interconnected computers, electronic control and regulation systems, etc..., especially where no special protection against electromagnetic interference is needed. These cables are in compliance with the VDE 0812 standard concerning their construction and electrical and mechanical specifications. They can be used in fixed or mobile applications but not in cable carriers.

ELECTRICAL SPECIFICATIONS

Section mm²	Test Voltage (V)	Working Voltage (V)	Electrical resistance of the wires Ω/Km	Min. insulation resistance MΩ/Km	Operating temperature °C
0.14	1500	250	136.00	20	-10 °C ÷ +70 °C
0.25	1500	250	78.00	20	-10 °C ÷ +70 °C
0.34	1500	250	52.20	20	-10 °C ÷ +70 °C
0.50	1500	250	39.00	20	-10 °C ÷ +70 °C
0.75	1500	250	26.00	20	-10 °C ÷ +70 °C
1.00	1500	250	19.00	20	-10 °C ÷ +70 °C
1.50	1500	250	12.00	20	-10 °C ÷ +70 °C

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in bare copper;
- Conductor insulation in PVC;
- Colour coding of wires according to DIN 47100 standard. For Li-YY-OZ the wires are black numbered in white;
- Outer sheath in flame-retardant PVC (CEI 20-22II) in Grey (RAL 7001).

REFERENCE STANDARDS

- CEI EN 60228 Cl.5
- CEI 20-22 II
- CEI 20-37/0
- DIN 47100
- CEI EN 60332-1-2

Li-YY

Code	Conductor construction n° x mm²	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A83011	2 x 0.14	3.40	15		100 m coil
A83021	3 x 0.14	3.60	18		100 m coil
A83031	4 x 0.14	3.80	21		100 m coil
A83041	5 x 0.14	4.10	24		100 m coil
A83051	6 x 0.14	4.40	28		100 m coil
A83061	7 x 0.14	4.40	30		100 m coil
A83071	8 x 0.14	5.00	36		100 m coil
A83081	10 x 0.14	5.60	43		100 m coil
A83091	12 x 0.14	5.80	48		100 m coil
A83101	14 x 0.14	6.00	53		100 m coil
A83111	16 x 0.14	6.30	60		100 m coil
A83121	18 x 0.14	6.60	65		100 m coil
A83131	21 x 0.14	7.00	73		100 m coil
A83141	25 x 0.14	7.60	84		100 m coil
A83151	27 x 0.14	8.00	94		100 m coil
A83161	30 x 0.14	8.20	102		100 m coil
A83211	2 x 0.25	3.80	19		100 m coil
A83221	3 x 0.25	4.00	23		100 m coil
A83231	4 x 0.25	4.30	28		100 m coil
A83241	5 x 0.25	4.90	35		100 m coil
A83251	6 x 0.25	5.20	40		100 m coil
A83261	7 x 0.25	5.20	44		100 m coil
A83271	8 x 0.25	5.80	49		100 m coil
A83281	10 x 0.25	6.40	59		100 m coil

Li-YY

Code	Conductor construction n° x mm²	Outer nom. Ø mm	Copper weight Kg/Km	Sheath colour	Packaging
A8329**1**	12 x 0.25	6.60	67		100 m coil
A8330**1**	14 x 0.25	6.90	75		100 m coil
A8331**1**	16 x 0.25	7.30	84		100 m coil
A8332**1**	18 x 0.25	7.60	91		100 m coil
A8333**1**	21 x 0.25	8.20	108		100 m coil
A8334**1**	25 x 0.25	9.00	125		100 m coil
A8335**1**	27 x 0.25	9.20	133		100 m coil
A8336**1**	30 x 0.25	9.50	145		100 m coil
A8341**1**	2 x 0.34	4.20	23		100 m coil
A8342**1**	3 x 0.34	4.50	29		100 m coil
A8343**1**	4 x 0.34	5.00	37		100 m coil
A8344**1**	5 x 0.34	5.40	44		100 m coil
A8345**1**	6 x 0.34	5.80	50		100 m coil
A8346**1**	7 x 0.34	5.80	55		100 m coil
A8347**1**	8 x 0.34	6.50	63		100 m coil
A8348**1**	10 x 0.34	7.20	75		100 m coil
A8349**1**	12 x 0.34	7.40	86		100 m coil
A8350**1**	14 x 0.34	7.80	97		100 m coil
A8351**1**	16 x 0.34	8.40	113		100 m coil
A8352**1**	18 x 0.34	8.80	124		100 m coil
A8353**1**	21 x 0.34	9.30	141		100 m coil
A8354**1**	25 x 0.34	10.30	167		100 m coil
A8355**1**	27 x 0.34	10.50	177		100 m coil
A8356**1**	30 x 0.34	10.90	194		100 m coil
A8361**1**	2 x 0.50	4.80	30		100 m coil
A8362**1**	3 x 0.50	5.30	40		100 m coil
A8363**1**	4 x 0.50	5.80	49		100 m coil
A8364**1**	5 x 0.50	6.20	58		100 m coil
A8365**1**	6 x 0.50	6.70	67		100 m coil
A8366**1**	7 x 0.50	6.70	74		100 m coil
A8367**1**	8 x 0.50	7.50	84		100 m coil
A8368**1**	10 x 0.50	8.60	106		100 m coil
A8369**1**	12 x 0.50	8.90	122		100 m coil
A8370**1**	14 x 0.50	9.30	137		100 m coil
A8371**1**	16 x 0.50	9.80	153		100 m coil
A8372**1**	18 x 0.50	10.40	172		100 m coil
A8373**1**	21 x 0.50	11.00	196		100 m coil
A8374**1**	25 x 0.50	12.10	228		100 m coil
A8375**1**	27 x 0.50	12.60	251		100 m coil
A8376**1**	30 x 0.50	13.00	274		100 m coil
A8381**1**	2 x 0.75	5.40	38		100 m coil
A8382**1**	3 x 0.75	5.80	51		100 m coil
A8383**1**	4 x 0.75	6.30	63		100 m coil
A8384**1**	5 x 0.75	6.90	75		100 m coil
A8385**1**	6 x 0.75	7.50	88		100 m coil
A8386**1**	7 x 0.75	7.50	98		100 m coil
A8387**1**	8 x 0.75	8.60	116		100 m coil
A8388**1**	10 x 0.75	9.70	141		100 m coil
A8389**1**	12 x 0.75	10.10	165		100 m coil
A8390**1**	14 x 0.75	10.60	187		100 m coil
A8391**1**	16 x 0.75	11.20	210		100 m coil
A8392**1**	18 x 0.75	11.80	233		100 m coil

Li-YY-OZ

Code	Conductor construction n° x mm²	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A84011	2 x 1.00	5.70	19.2		100 m coil
A84021	3 x 1.00	6.00	28.8		100 m coil
A84031	4 x 1.00	6.60	38.4		100 m coil
A84041	5 x 1.00	7.20	48.0		100 m coil
A84051	6 x 1.00	8.00	57.6		100 m coil
A84061	7 x 1.00	8.00	67.2		100 m coil
A84071	8 x 1.00	8.90	76.8		100 m coil
A84081	10 x 1.00	10.20	96.0		100 m coil
A84091	12 x 1.00	10.50	115.2		100 m coil
A84101	14 x 1.00	11.10	134.4		100 m coil
A84111	16 x 1.00	11.80	153.6		100 m coil
A84126	18 x 1.00	12.50	172.8		500 m drum
A84211	2 x 1.50	6.70	28.8		100 m coil
A84221	3 x 1.50	7.10	43.2		100 m coil
A84231	4 x 1.50	8.00	57.6		100 m coil
A84241	5 x 1.50	8.70	72.0		100 m coil
A84251	6 x 1.50	9.50	86.4		100 m coil
A84261	7 x 1.50	9.50	100.8		100 m coil
A84271	8 x 1.50	10.80	115.2		100 m coil
A84281	10 x 1.50	12.40	144.0		100 m coil
A84291	12 x 1.50	12.80	172.8		100 m coil
A84306	14 x 1.50	13.50	201.6		500 m drum
A84316	16 x 1.50	14.60	230.4		500 m drum
A84326	18 x 1.50	15.40	259.2		500 m drum

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

LI-YCY • LI-YCY-OZ CABLES

GENERAL FEATURES

Flexible cables for data transmission used for process control on industrial appliances, electronic devices, interconnected computers, electronic control and regulation systems, etc..., especially where no special protection against electromagnetic interference is needed. These cables are in compliance with the VDE 0812 standard concerning their construction and electrical and mechanical specifications. They can be used in fixed or mobile applications but not in cable carriers.

ELECTRICAL SPECIFICATIONS

Section mm²	Test Voltage (V)	Working Voltage (V)	Electrical resistance of the wires Ω/Km	Min. insulation resistance MΩ/Km	Operating temperature °C
0.14	1500	250	136.00	20	-10 °C ÷ +70 °C
0.25	1500	250	78.00	20	-10 °C ÷ +70 °C
0.34	1500	250	52.20	20	-10 °C ÷ +70 °C
0.50	1500	250	39.00	20	-10 °C ÷ +70 °C
0.75	1500	250	26.00	20	-10 °C ÷ +70 °C
1.00	1500	250	19.00	20	-10 °C ÷ +70 °C
1.50	1500	250	12.00	20	-10 °C ÷ +70 °C

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in bare copper;
- Conductor insulation in PVC;
- Colour coding of wires according to DIN 47100 standard. For Li-YCY-OZ the wires are black numbered in white;
- Polyester foil over wires;
- Tinned copper braid. Coverage (kf) > 85%;
- Outer sheath in flame-retardant PVC (CEI 20-22 II) in Grey (RAL 7001).

REFERENCE STANDARDS

- CEI EN 60228 Cl.5
- CEI 20-22 II
- CEI 20-37/0
- DIN 47100
- CEI EN 60332-1-2

Li-YCY

Code	Conductor construction n° x mm²	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A80011 (*)	2 x 0.14	3.80	22	■■■■	100 m coil
A80021 (*)	3 x 0.14	4.00	26	■■■■	100 m coil
A80031 (*)	4 x 0.14	4.20	30	■■■■	100 m coil
A80041 (*)	5 x 0.14	4.50	34	■■■■	100 m coil
A80051 (*)	6 x 0.14	4.80	38	■■■■	100 m coil
A80061	7 x 0.14	4.80	40	■■■■	100 m coil
A80071 (*)	8 x 0.14	5.50	49	■■■■	100 m coil
A80081	10 x 0.14	6.10	58	■■■■	100 m coil
A80091 (*)	12 x 0.14	6.30	65	■■■■	100 m coil
A80101	14 x 0.14	6.50	71	■■■■	100 m coil
A80111	16 x 0.14	6.80	77	■■■■	100 m coil
A80121	18 x 0.14	7.10	84	■■■■	100 m coil
A80131	21 x 0.14	7.50	93	■■■■	100 m coil
A80141	25 x 0.14	8.10	106	■■■■	100 m coil
A80151	27 x 0.14	8.30	110	■■■■	100 m coil
A80161	30 x 0.14	8.50	122	■■■■	100 m coil

(*) In stock

RoHS

Li-YCY

Code	Conductor construction n° x mm²	Outer nom. Ø mm	Copper weight Kg/Km	Sheath colour	Packaging
A80211 (*)	2 x 0.25	4.20	27		100 m coil
A80221 (*)	3 x 0.25	4.40	32		100 m coil
A80231 (*)	4 x 0.25	4.70	37		100 m coil
A80241 (*)	5 x 0.25	5.40	49		100 m coil
A80251 (*)	6 x 0.25	5.70	54		100 m coil
A80261 (*)	7 x 0.25	5.70	57		100 m coil
A80271 (*)	8 x 0.25	6.30	65		100 m coil
A80281 (*)	10 x 0.25	6.90	76		100 m coil
A80291 (*)	12 x 0.25	7.10	85		100 m coil
A80301	14 x 0.25	7.40	95		100 m coil
A80311	16 x 0.25	7.80	105		100 m coil
A80321	18 x 0.25	8.10	114		100 m coil
A80331	21 x 0.25	8.70	130		100 m coil
A80341	25 x 0.25	9.60	158		100 m coil
A80351	27 x 0.25	9.80	167		100 m coil
A80361	30 x 0.25	10.10	180		100 m coil
A80411 (*)	2 x 0.34	4.60	32		100 m coil
A80421 (*)	3 x 0.34	4.90	39		100 m coil
A80431 (*)	4 x 0.34	5.50	50		100 m coil
A80441 (*)	5 x 0.34	5.90	59		100 m coil
A80451 (*)	6 x 0.34	6.30	67		100 m coil
A80461 (*)	7 x 0.34	6.30	70		100 m coil
A80471	8 x 0.34	7.00	80		100 m coil
A80481 (*)	10 x 0.34	7.70	94		100 m coil
A80491 (*)	12 x 0.34	7.90	106		100 m coil
A80501	14 x 0.34	8.30	117		100 m coil
A80511	16 x 0.34	8.90	136		100 m coil
A80521	18 x 0.34	9.30	149		100 m coil
A80531	21 x 0.34	9.90	173		100 m coil
A80541	25 x 0.34	10.80	197		100 m coil
A80551	27 x 0.34	11.10	214		100 m coil
A80561	30 x 0.34	11.50	230		100 m coil

(*) In stock

Li-YCY

Code	Conductor construction n° x mm²	Outer nom. mm Ø mm	Copper weight Kg/Km	Sheath colour	Packaging
A80611 (*)	2 x 0.50	5.50	45		100 m coil
A80621 (*)	3 x 0.50	5.80	55		100 m coil
A80631 (*)	4 x 0.50	6.30	64		100 m coil
A80641 (*)	5 x 0.50	6.70	74		100 m coil
A80651 (*)	6 x 0.50	7.20	86		100 m coil
A80661 (*)	7 x 0.50	7.20	92		100 m coil
A80671 (*)	8 x 0.50	8.00	105		100 m coil
A80681	10 x 0.50	9.10	130		100 m coil
A80691 (*)	12 x 0.50	9.40	150		100 m coil
A80701	14 x 0.50	9.90	170		100 m coil
A80711	16 x 0.50	10.40	187		100 m coil
A80721	18 x 0.50	11.00	211		100 m coil
A80731	21 x 0.50	11.60	234		100 m coil
A80741	25 x 0.50	12.70	270		100 m coil
A80751	27 x 0.50	13.20	294		100 m coil
A80761	30 x 0.50	13.60	325		100 m coil
A80811	2 x 0.75	6.10	57		100 m coil
A80821	3 x 0.75	6.50	70		100 m coil
A80831	4 x 0.75	7.00	82		100 m coil
A80841	5 x 0.75	7.50	96		100 m coil
A80851	6 x 0.75	8.10	112		100 m coil
A80861	7 x 0.75	8.10	121		100 m coil
A80871	8 x 0.75	9.20	143		100 m coil
A80881	10 x 0.75	10.40	178		100 m coil
A80891	12 x 0.75	10.80	200		100 m coil
A80901	14 x 0.75	11.30	230		100 m coil
A80911	16 x 0.75	11.90	256		100 m coil
A80921	18 x 0.75	12.50	280		100 m coil

(*) In stock

Li-YCY-OZ

Code	Conductor construction n° x mm²	Outer nom. Ø mm	Copper weight Kg/Km	Sheath colour	Packaging
A84511	2 x 1.0	6.30	61		100 m coil
A84521	3 x 1.0	6.60	76		100 m coil
A84531	4 x 1.0	7.20	92		100 m coil
A84541	5 x 1.0	7.80	112		100 m coil
A84551	6 x 1.0	8.60	129		100 m coil
A84561	7 x 1.0	8.60	141		100 m coil
A84571	8 x 1.0	9.60	161		100 m coil
A84581	10 x 1.0	10.90	204		100 m coil
A84591	12 x 1.0	11.30	232		100 m coil
A84606	14 x 1.0	11.90	265		500 m drum
A84616	16 x 1.0	12.50	294		500 m drum
A84626	18 x 1.0	13.20	327		500 m drum
A84711	2 x 1.50	7.30	83		100 m coil
A84721	3 x 1.50	7.90	108		100 m coil
A84731	4 x 1.50	8.60	132		100 m coil
A84741	5 x 1.50	9.30	156		100 m coil
A84751	6 x 1.50	10.20	190		100 m coil
A84761	7 x 1.50	10.20	208		100 m coil
A84771	8 x 1.50	11.80	250		100 m coil
A84786	10 x 1.50	13.60	314		500 m drum
A84796	12 x 1.50	14.00	360		500 m drum
A84806	14 x 1.50	14.90	413		500 m drum
A84816	16 x 1.50	15.60	45		500 m drum
A84826	18 x 1.50	16.70	515		500 m drum

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

LI-YCY (TP) CABLES

GENERAL FEATURES

Flexible cables for data transmission used for process control on industrial appliances, electronic devices, interconnected computers, electronic control and regulation systems, etc..., especially where no special protection against electromagnetic interference is needed. These cables are in compliance with the VDE 0812 standard concerning their construction and electrical and mechanical specifications. They can be used in fixed or mobile applications but not in cable carriers.

ELECTRICAL SPECIFICATIONS

Section mm²	Test Voltage (V)	Working Voltage (V)	Electrical resistance of the wires Ω/Km	Min. insulation resistance	Operating temperature °C
0.14	1500	250	136.00	20	-10 °C ÷ +70 °C
0.25	1500	250	78.00	20	-10 °C ÷ +70 °C
0.34	1500	250	52.20	20	-10 °C ÷ +70 °C

MANUFACTURING SPECIFICATIONS

- Flexible inner conductors in bare copper;
- Conductor insulation in PVC;
- Colour coding of wires according to DIN 47100 standard;
- Twisted pairs;
- Polyester foil over wires;
- Tinned copper braid. Coverage (kf) > 85%;
- Outer sheath in flame-retardant PVC (CEI 20-22II) in Grey (RAL 7001).

REFERENCE STANDARDS

- CEI EN 60228 Cl.5
- CEI 20-22 II
- CEI 20-37/0
- DIN 47100
- CEI EN 60332-1-2

Code	Conductor construction n° x mm²	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A8100**1**	2 x 2 x 0.14	4.60	33		100 m coil
A8101**1**	3 x 2 x 0.14	5.40	44		100 m coil
A8102**1**	4 x 2 x 0.14	6.10	56		100 m coil
A8103**1**	5 x 2 x 0.14	6.70	65		100 m coil
A8104**1**	6 x 2 x 0.14	6.90	71		100 m coil
A8105**1**	8 x 2 x 0.14	7.50	85		100 m coil
A8106**1**	10 x 2 x 0.14	8.30	99		100 m coil
A8110**1** (*)	2 x 2 x 0.25	5.20	43		100 m coil
A8111**1** (*)	3 x 2 x 0.25	6.30	60		100 m coil
A8112**1** (*)	4 x 2 x 0.25	6.90	72		100 m coil
A8113**1**	5 x 2 x 0.25	7.70	84		100 m coil
A8114**1**	6 x 2 x 0.25	7.90	93		100 m coil
A8115**1**	8 x 2 x 0.25	8.90	123		100 m coil
A8116**1**	10 x 2 x 0.25	9.80	144		100 m coil
A8120**1** (*)	2 x 2 x 0.34	6.00	57		100 m coil
A8121**1**	3 x 2 x 0.34	7.00	73		100 m coil
A8122**1**	4 x 2 x 0.34	7.70	87		100 m coil
A8123**1**	5 x 2 x 0.34	8.80	108		100 m coil
A8124**1**	6 x 2 x 0.34	9.10	126		100 m coil
A8125**1**	8 x 2 x 0.34	10.00	153		100 m coil
A8126**1**	10 x 2 x 0.34	11.00	180		100 m coil

(*) In stock

RoHS

AMBRA90 CAVI

SPECIAL CABLES DIVISION

ELECTRONIC CABLES

- CABLES FOR EIA-RS-422
- CABLES FOR EIA-RS-232
- CABLES FOR EIA-RS-485

CABLES FOR EIA-RS APPLICATIONS

▼ GENERAL FEATURES

These types of cables are used for connection to computerized control systems, where it is important to comply with impedance values and ensure that signals are transmitted correctly.

▼ STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST

Cables for EIA-RS-422

▼ SHIELDED PAIR CABLES MANUFACTURING SPECIFICATIONS

- Inner conductors in tinned copper, multi-wire
- Conductor insulation in foamed Polyolefin
- Twisted cores with Polyester foil (Pet), drain wire and shield in Aluminium/Polyester (Al/Pet) foil
- Migration-resistant polyester (Pet) foil
- Outer sheath in PVC-FR (CEI 20-22 II), in Grey
- Inner conductor electrical resistance max. 82.0 Ω/km
- Standard impedance 100 Ω
- Mutual capacitance of the pair 45 pF/m
- Capacitance between a conductor and all the others connected to the shield 80 pF/m
- Operating temperature -10°C to +70°C
- Minimum bending radius is 10 times the diameter of the cables
- Use: fixed applications

Code	Conductor construction n° x AWG	Pair Colour	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A79011[1]	2x2xAWG 24/7	Ne-Ro/Ne-Bi	8.00	58.0	■■■■	100 m coil
A79021[2]	4x2xAWG 24/7	Ne-Ro/Ne-Bi Ne-Ve/Ne-Bl	9.20	75.0	■■■■	100 m coil

(1) Equivalent to Belden 9729
(2) Equivalent to Belden 9728

Cables for EIA-RS-422

TOTALLY SHIELDED CABLE MANUFACTURING SPECIFICATIONS

- Inner conductors in tinned copper, multi-wire
- Conductor insulation in polyolefin
- Twist of the cores with different pitches
- Polyester foil (Pet)
- Tinned copper drain wire
- Tinned copper braid shield with coverage (kf) >70%
- Outer sheath in PVC-FR (CEI 20-22 II), in Grey
- Electrical resistance of the inner conductor max. 82.0 Ω/km
- Standard impedance 100 Ω
- Mutual capacitance of the pair 50pF/m
- Capacitance between a conductor and all the others connected to the shield 95 pF/m
- Operating temperature -10°C to +70°C
- Minimum bending radius is 10 times the cable's diameter
- Use: fixed applications.

Code	Conductor construction n° x AWG	Pair Colour	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A79031[1]	2x2xAWG 24/7	Bi/Bl-Bl/Bi Bi/Ar-Ar/Bi	7.40	56.0		100 m coil

(1) Equivalent to Belden 9829

Cables for EIA-RS-232

MANUFACTURING SPECIFICATIONS

- Inner conductors in tinned copper, multi-wire
- Conductor insulation in PVC
- Twist of the cores with different pitches
- Polyester foil (Pet)
- Tinned copper drain wire
- Shield in Aluminium/Polyester (Al/Pet) foil
- Outer sheath in PVC-FR (CEI 20-22 II), in Grey
- Electrical resistance of the inner conductor max. 82.0 Ω/km
- Standard impedance 75 Ω
- Mutual capacitance of the pair 130 pF/m for the cable with one pair, 100 pF/m for the others
- Capacitance between a conductor and all the others connected to the shield 240 pF/m for the cable with one pair, 160 pF/m for the others
- Operating temperature -10°C to +70°C
- Minimum bending radius is 10 times the cable's diameter
- Use: fixed applications

Code	Conductor construction n° x AWG	Pair Colour	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A79101[1]	1x2xAWG 24/7	Ne-Ro	4.00	25.0		100 m coil
A79111[2]	2x2xAWG 24/7	Ne-Ro/Ne-Bi	5.60	36.0		100 m coil
A79121[3]	4x2xAWG 24/7	Ne-Ro/Ne-Bi Ne-Ve/Ne-Bl	6.70	60.0		100 m coil

(1) Equivalent to Belden 9501
(2) Equivalent to Belden 9502
(3) Equivalent to Belden 9504

Cables for EIA-RS-485

BRAID-SHIELDED CABLES MANUFACTURING SPECIFICATIONS

- Inner conductors in tinned copper, multi-wire
- Conductor insulation in polyethylene
- Twist of the cores with different pitches
- Shield in Aluminium/Polyester (Al/Pet) foil
- Tinned copper drain wire
- Tinned copper braid shield with covering (kf) 90%
- Outer sheath in PVC-FR (CEI 20-22 II), in Grey
- Electrical resistance of the inner conductor max. 82.0 Ω/km
- Standard impedance 120 Ω
- Mutual capacitance of the pair 45 pF/m
- Capacitance between a conductor and all the others connected to the shield is 75 pF/m
- Operating temperature -10°C to +70°C
- Minimum bending radius is 10 times the cable's diameter
- Use: fixed applications

Code	Conductor construction n° x AWG	Pair Colour	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A79201[1]	1x2xAWG 24/7	Bi/Bl - Bl/Bi	5.80	50.0		100 m coil
A79211[2]	2x2xAWG 24/7	Bi/Bl - Bl/Bi Bi/Ar-Ar/Bi	8.40	82.0		100 m coil

(1) Equivalent to Belden 9841
(2) Equivalent to Belden 9842

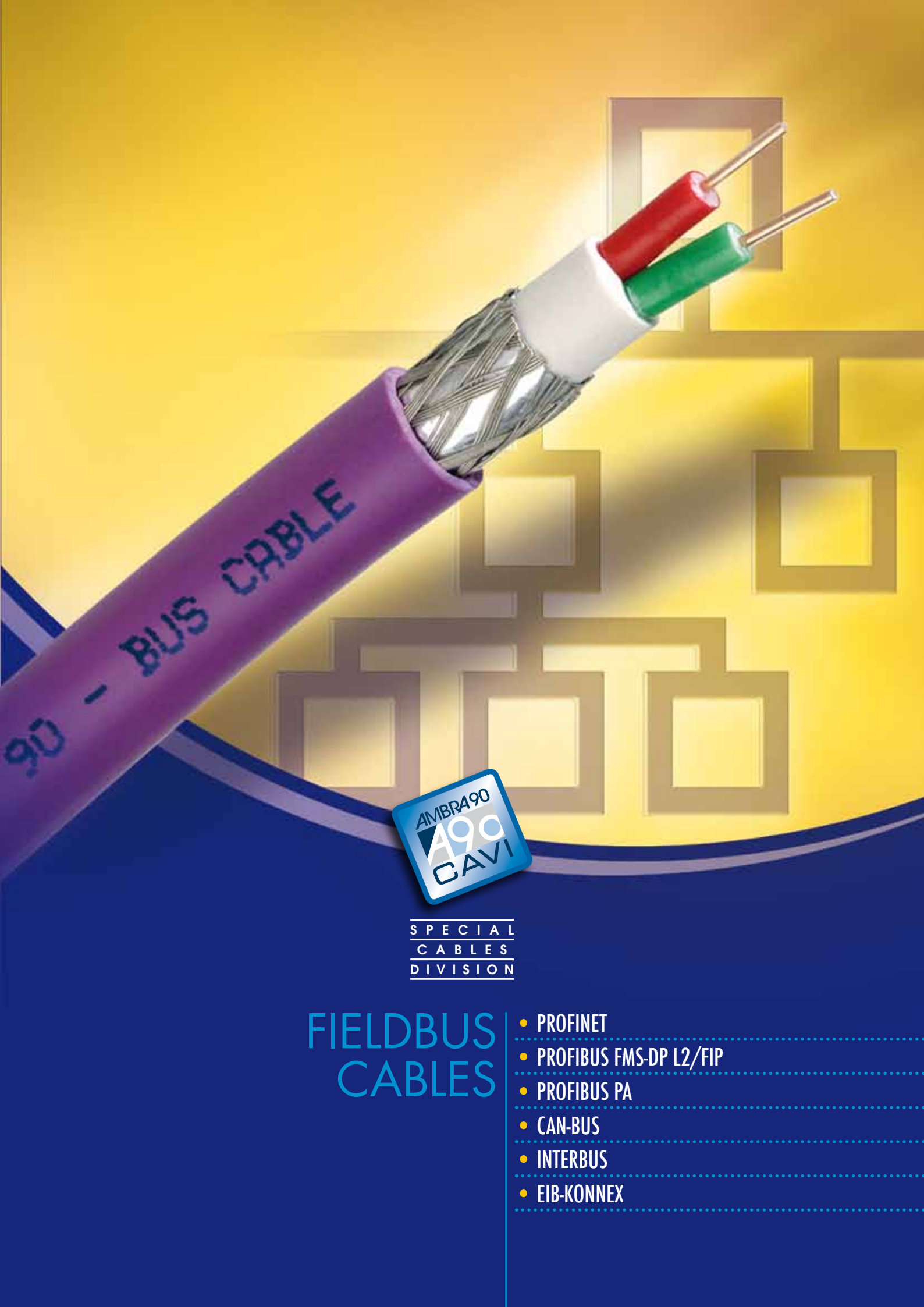
Cables for EIA-RS-485

FOIL-SHIELDED CABLE MANUFACTURING SPECIFICATIONS

- Red copper inner conductor, single wire
- Conductor insulation in foamed polyethylene
- Twist of the cores with different pitches
- Polyester foil (Pet)
- Tinned copper drain wire
- Shield in Aluminium/Polyester/Aluminium (Al/Pet/Al) foil
- Outer sheath in PVC-FR (CEI 20-22 II), in Grey
- Electrical resistance of the inner conductor max. 55.0 Ω/km
- Standard impedance 150 Ω
- Mutual capacitance of the pair 50 pF/m
- Capacitance between a conductor and all the others connected to the shield of 30 pF/m
- Operating temperature -10°C to +70°C
- Minimum bending radius is 10 times the cable's diameter
- Use: fixed applications

Code	Conductor construction n° x AWG	Pair Colour	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A79221[1]	2x2xAWG 22/1	Ne-Gi / Ro-Bl	9.80	54.0		100 m coil

(1) Equivalent to Belden 9184



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SPECIAL CABLES DIVISION

FIELDBUS CABLES

- PROFINET
- PROFIBUS FMS-DP L2/FIP
- PROFIBUS PA
- CAN-BUS
- INTERBUS
- EIB-KONNEX

PROFINET

GENERAL FEATURES

These copper cables are designed for industrial applications (Industrial Ethernet) to ensure superior transmission properties under very difficult operating conditions. These cables are cat. 5 100 and shielded to support TCP/IP in PROFInet™ systems with specific features up to 100MHz.

ELECTRICAL SPECIFICATIONS

- Standard impedance: 100 Ohms +/- 15 Ohms in the range 1 to 100 MHz
- Conductor resistance: 55 Ohm/km
- Insulating resistance: 0,5 GOhm/km min.
- Mutual capacitance: 50 nF/km
- Test voltage: 2.0 kV. 2,0 kV.

Frequency (MHz)	10	16	62,5	100
Attenuation (dB/100 m)	6.5	8.2	17	22
Next (dB)	50.3	47.3	38.4	35.3
ACR	43.8	39.7	27.8	23.8

MANUFACTURING SPECIFICATIONS

- Bare copper inner conductors AWG 22/1;
- Conductor insulation in PE;
- Core colours: white, yellow, blue, orange;
- Cores twisted: in fours;
- Polyester foil;
- Shield: Al/Pet foil + CuSn braid (covering 85%);
- Outer sheath in FR-PVC, in GREEN.

TECHNICAL SPECIFICATIONS

- Operating temperature: -40°C / +70°C
- Field of application: PROFInet type fieldbus systems;
- Use: fixed applications.

REFERENCE STANDARDS

PROFInet draft

- CEI EN 60332-1-2

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

Code	Conductor construction n° x AWG	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A8743**1**	1x4xAWG 22/1	6.50	70	■■■■	100 m coil

ON REQUEST:
- AWG 22/7 flexible conductors for mobile applications;
- AWG 22/19 flexible conductors and sheath in PUR for applications in cable carriers.

PROFIBUS FMS-DP L2/FIP

GENERAL FEATURES

These shielded copper cables are suitable for the transmission of data in FIP (Flux Information Processes), PROFIBUS-DP (Dezentrale Peripherie) and PROFIBUS-FMS (Fieldbus Message Specification) type systems with electrical specifications in compliance with standard EIA-RS-485. The transmission speed varies from 9.6 kbps to 12 Mbps based on the length of the section in question:

PROFIBUS-DP		FIP
9.60 kbps = 1200 m max	500.00 kbps = 400 m max	1.00 Mbps = 200 m max
19.20 kbps = 1200 m max	1.50 Mbps = 200 m max	1.00 Mbps = 200 m max
93.75 kbps = 1200 m max	12.00 Mbps = 100 m max	
187.50 kbps = 1000 m max		

ELECTRICAL SPECIFICATIONS

- Conductor max. resistance in ohms: 115 Ohm/km
- Min. insulation resistance: 150 MOhm/km
- Standard impedance: 150 Ohm +/- 15 Ohm (>= 3MHz)
- Mutual capacitance (800 MHz): 28 nF/km
- Core test voltage: 1 kV
- Shield resistance: 10 Ohm/km
- Attenuation: 5,0 dB/km (200 kHz) - 21 dB/km (4 MHz) - 40 dB/km (16 MHz)
- Transfer impedance: <= 10,0 mOhm/m (10 MHz)

MANUFACTURING SPECIFICATIONS

- Red copper inner conductors (diam. 0.64 mm);
- Conductor insulation in PEE;
- Core colours: red, green;
- First sheath in PVC;
- Shield: Al/Pet foil + CuSn braid (coverage 60%);
- Outer sheath in FR-PVC. - Sheath colour: violet.

TECHNICAL SPECIFICATIONS

- Operating temperature: -40°C / +70°C;
- Field of application: PROFIBUS FMS-DP and L2/FIP type fieldbus systems;
- Use: fixed applications.

REFERENCE STANDARDS

PROFIBUS standard
- EN 61784-1
- EN 61158-2
- DIN 19245
- CEI EN 60332-1-2

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	in stock
6	500 m reel	in stock
7	1000 m reel	in stock

Code	Conductor construction n° x AWG	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A8722**1**	1x2x0.65	8.00	80.0		100 m coil

ON REQUEST:
- Oil-resistant PVC sheath
- Sheath in LSZH
- Sheath in PE for underground laying.

PROFIBUS PA

GENERAL FEATURES

These shielded copper cables are suitable to power and transmit data in PROFIBUS-PA (Process Automation) type systems from master devices to sensors and actuators in complicated security environments. Designed to support data transmission speeds up to 31.25 kbps. The maximum length of the section depends on various factors, such as: power supply voltage and power absorption.

ELECTRICAL SPECIFICATIONS

- Conductor max. resistance in ohms: 22 Ohm/km max.
- Min. insulation resistance: 1 GOhm/km min.
- Standard impedance: 100 Ohm +/- 20%
- Mutual capacitance (800 MHz): 55 nF/km
- Core test voltage: 2 kV
- Shield resistance: 11 Ohm/km
- Attenuation: 3,0 dB/km (39 kHz) - 4,0 dB/km (100 kHz) - 15 dB/km (1 kHz)
- Transfer impedance: <= 15,0 mOhm/m (100 kHz) - <= 18,0 mOhm/m (1 MHz)

MANUFACTURING SPECIFICATIONS

- Red copper inner conductors (sec. 1.0 mm²);
- Conductor insulation in PE;
- Core colours: red, green;
- Twist of core with fillers;
- Shield: Pet foil + CuSn braid (covering 85%)
- Outer sheath in FR-PVC. - Sheath colour: blue.

TECHNICAL SPECIFICATIONS

- Operating temperature: -10 °C ÷ +70 °C
- Field of application: PROFIBUS-PA type fieldbus systems;
- Use: fixed application.

REFERENCE STANDARDS

PROFIBUS standard
- EN 61784-1
- EN 61158-2
- CEI EN 60332-1-2
- DIN 19245

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

Code	Conductor construction n° x AWG	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A87281	1x2x1.00	7.60	74.0	■■■■	100 m coil

ON REQUEST:
- Sheath in LSZH
- Black sheath in FR-PVC.

CAN-BUS

GENERAL FEATURES

These single- or double-paired shielded copper cables are suitable for the transmission of data from master devices to sensor and actuators in CANBUS (Controller Area Network) systems. Their electrical specifications are similar to the standard EIA-RS-485. The transmission speed varies from 9.6 kbps to 1.2 Mbps based on the length of installed segments and on cable section size. CANBUS systems are most commonly used in the textile industry, machinery production industry and in the medical field.

ELECTRICAL SPECIFICATIONS

- Max. core resistance (Ohms): 87 Ω/km (0.22 mm2) - 25 Ω/km (0.75 mm2)
- Min. insulating resistance: 1.0 GΩ/km
- Standard impedance: 120 Ω +/- 10%
- Mutual capacitance (800 MHz): 58 nF/km
- Core test voltage: 1.5 kV
- Attenuation: 5.6 dB/100 m (10 MHz) (0.22 mm2)
  3.5 dB/100 m (10 MHz) (0.75mm2)
- Transfer impedance: <= 250 mΩ/m (10 MHz)

MANUFACTURING SPECIFICATIONS

	1X2X0.22	1X2X0.75
Red copper conductors:	AWG24/7	AWG18/24
Inner conductor insulation:	PE PE	
Core colour coding:	DIN 47100	DIN 47100
Foil:	PetPet	
Shield:	CuSn braid (coverage 85%)	CuSn braid (coverage 85%)
Outer sheath:	FR PVC - in Violet	FR PVC - in Violet

TECHNICAL SPECIFICATIONS

- Operating temperature: -40°C / +70°C;
- Field of application: fieldbus systems CAN-BUS;
- Use: fixed applications.

REFERENCE STANDARDS

- ISO 11898
- DIN 47100
- CEI EN 60332-1-2

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

Code	Conductor construction n° x AWG	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A87501	1x2x0.22	5.40	16.70		100 m coil
A87511	2x2x0.22	7.10	34.80		100 m coil
A87521	1x2x0.75	8.60	54.70		100 m coil
A87531	2x2x0.75	11.50	81.00		100 m coil

ON REQUEST: • Sheath in LSZH.

INTERBUS

GENERAL FEATURES

These paired shielded copper cables are suitable for the transmission of data from master devices to sensors and actuators in INTERBUS systems and for powering devices. Based on the length of the INTERBUS segments, the following transmission speeds are available:
500 kbps = max. 400 m ("remote" cable) = max. 50 m ("remote installation" cable)

ELECTRICAL SPECIFICATIONS

- Conductor max. resistance in ohms: 78 Ohm/km (0,22 mm2) - 19,5 Ohm/km (1,0 mm2)
- Min. insulation resistance: 1,0 GOhm/km
- Standard impedance: 100 Ohm +/- 15 Ohm
- Mutual capacitance (800 MHz): 50 nF/km
- Core test voltage: 1 kV
- Shield resistance: 18 Ohm/km
- Attenuation: 1,5 dB/100 m (256 kHz) - 2,5 dB/100 m (772 kHz) - 2,7 dB/100 m (1 MHz) 6,9 dB/100 m (4 MHz) - 12 dB/100 m (10 MHz) - 15,5 dB/100m (16 MHz) - 17,2 dB/100 m (20 MHz)
- Transfer impedance: <= 250 mOhm/m (30 MHz)

MANUFACTURING SPECIFICATIONS	3x2x0.25 ("REMOTE" cable)	3x2x0.25 + 3x1.0 ("REMOTE INSTALLATION" cable)
Red copper inner conductors:	AWG24/19	AWG24/19 - (32x0.195)
Conductor insulation:	PE	PE
Core colour coding:	DIN 47100	DIN 47100, brown, blue, yellow/green
Foil:	Pet	Pet
Shield:	Cu braid (coverage 85%)	Cu braid (coverage 85%)
Outer sheath:	FR PUR – in Violet	FR PUR – in Violet

TECHNICAL SPECIFICATIONS

- Operating temperature: -10 °C ÷ +70 °C;
- Field of application: INTERBUS type fieldbus systems;
- Use: for mobile applications in cable carriers.

REFERENCE STANDARDS

INTERBUS standard
- EN 61784-1
- EN 61158-2
- CEI EN 60332-1-2
- DIN 47100
- DIN 19258

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

Code	Conductor construction n° x AWG	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A87441	3x2x0.25	7.60	75.00		100 m coil
A87451	3x2x0.25 + 3x1.0	8.00	97.00		100 m coil

ON REQUEST: • Sheath in LSZH.

INTERBUS

GENERAL FEATURES

These paired shielded copper cables are suitable for the transmission of data from master devices to sensors and actuators in INTERBUS systems and for powering devices. Based on the length of the INTERBUS segments, the following transmission speeds are available:
500 kbps = max. 400 m ("remote" cable) = max. 50 m ("remote installation" cable)

ELECTRICAL SPECIFICATIONS

- Conductor max. resistance in ohms: 90 Ohm/km (0,22 mm2) - 19,5 Ohm/km (1,0 mm2)
- Min. insulating resistance: 1,0 GOhm/km
- Standard impedance: 100 Ohm +/- 15 Ohm
- Mutual capacitance (800 MHz):: 50 nF/km
- Core test voltage: 1 kV
- Shield resistance: 13 Ohm/km
- Attenuation: 1,5 dB/100 m (256 kHz) - 2,5 dB/100 m (772 kHz) - 2,7 dB/100 m (1 MHz) 6,9 dB/100 m (4 MHz) - 12 dB/100 m (10 MHz) - 15,5 dB/100m (16 MHz) - 17,2 dB/100 m (20 MHz)
- Transfer impedance: <= 250 mOhm/m (30 MHz)

MANUFACTURING SPECIFICATIONS	3x2x0.22 ("REMOTE" cable)	3x2x0.22 + 3x1.0 ("REMOTE INSTALLATION" cable)
Red copper inner conductors:	AWG24/7	AWG24/7 - (32x0,195)
Conductor insulation:	PE	PE
Core colour coding:	DIN 47100	DIN 47100, brown, blue, yellow/green
Foil:	Pet	Pet
Shield:	Cu braid (coverage 85%)	Cu braid (coverage 85%)
Outer sheath:	FR PUR – in Violet	FR PUR – in Violet

TECHNICAL SPECIFICATIONS

- Operating temperature: -10 °C ÷ +70 °C;
- Field of application: INTERBUS type fieldbus systems;
- Use: fixed applications.

REFERENCE STANDARDS

INTERBUS standard
- EN 61784-1
- EN 61158-2
- CEI EN 60332-1-2
- DIN 47100
- DIN 19258

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

Code	Conductor construction n° x AWG	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A87461	3x2x0.22	7.00	70.0		100 m coil
A87471	3x2x0.22 + 3x1.0	8.00	100.0		100 m coil

ON REQUEST: • Sheath in LSZH.

EIB-KONNEX

GENERAL FEATURES

These cables are used for the transmission of bus signals from control devices to sensors and actuators inside residential buildings. They ensure perfect communication in compliance with the standard EIB KNX (European Installation Bus).
They can be placed on top of or underneath plaster inside ducts or channels, as well as externally to provide protection against direct exposure to sunlight. Cabling can be run with power cables without limitations. BUS EIB can be used to control lighting, rolling shutters, heating, ventilation, etc.

ELECTRICAL SPECIFICATIONS

- Standard impedance: 100 Ohm
- Conductor resistance: 34,6 Ohm/km
- Insulation resistance: min. 100 MOhms/km
- Sheath surface resistance: min. 1 GOhms
- Mutual capacitance (800 Hz): 47 nF/km
- Core test voltage: 1,0 kV
- Test voltage for the cores connected together: 4,0 kV
- Attenuation: 15 dB/km (50kHz) - 95 dB/km (5 MHz)

MANUFACTURING SPECIFICATIONS

- Red copper inner conductor diam. 0.80 mm;
- Conductor insulation in LSZH or PVC;
- Core colour: 1st pair Red(+)/Black(-) 2nd pair Yellow(+)/White(-);
- Core twisting: in fours;
- Polyester foil;
- Shield: Al/Pet foil (coverage 100%)
- M1 type or FR-PVC outer sheath. Sheath colour: green.

TECHNICAL SPECIFICATIONS

- Operating temperature: -10°C / +70°C;
- Field of application: EIB KONNEX type BUS systems;
- Use: fixed applications.

REFERENCE STANDARDS

EIB NONNEX standard
- CEI EN 60332-1-2

STANDARD PACKAGING

Code final no.	Packaging	Manufacturing
1	100 m coil	ON REQUEST
6	500 m reel	ON REQUEST
7	1000 m reel	ON REQUEST

Code	Conductor construction n° x AWG	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A87211 (1)	2x2x0.80	6.10	50.0		100 m coil
A87341 (2)	2x2x0.80	5.50	45.0		100 m coil

(1) Sheath in LSZH (Low Smoke Zero Halogen)
(2) Sheath in flame-retardant PVC (CEI 20-22 II)

AMBRA90 CAVI

SPECIAL CABLES DIVISION

SUBMERSIBLE PUMP CABLES

RoHS

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SUBMERSIBLE PUMP CABLES

GENERAL FEATURES

These special cables are used to power submersible pump motors. Suitable for permanent immersion in water up to 250m thanks to the special composition of the EPR girded sheath. They are also suitable for use in drinking water (as per the Italian Ministry for Health Circular no.102, 2/12/1978) as certified by the most prestigious European laboratories on the basis of quality analyses carried out on the drinking water following immersion of the cables. Some cables are also available with gel-filled cores when the cable and motor are connected without the use of a connector. In this case, the cores come into contact with water or oil, so the gel serves as an essential barrier to avoid the backflow of liquid.

Section mm²	Test Voltage V	Working Voltage V	Conductor electrical resistance Ω/Km	Min. insulation resistance Ω/Km	Max. current intensity A
1.50	2000	450/750	12.60	20	20
1.50 jelly	2000	450/750	13.60	20	20
2.00	2000	450/750	8.70	20	24
2.00 jelly	2000	450/750	9.20	20	24
4.00	3000	450/750	5.30	20	35
6.00	3000	450/750	3.40	20	44

MANUFACTURING SPECIFICATIONS

- Class 5 bare copper conductors. Class 2 only for the cores filled with gel;
- Conductor insulation in XLPE. Core colour in compliance with CEI-UNEL 00722;
- Sheath in G8 EPR thermoplastic rubber in BLUE (RAL 5015) or BLACK (RAL 9011).

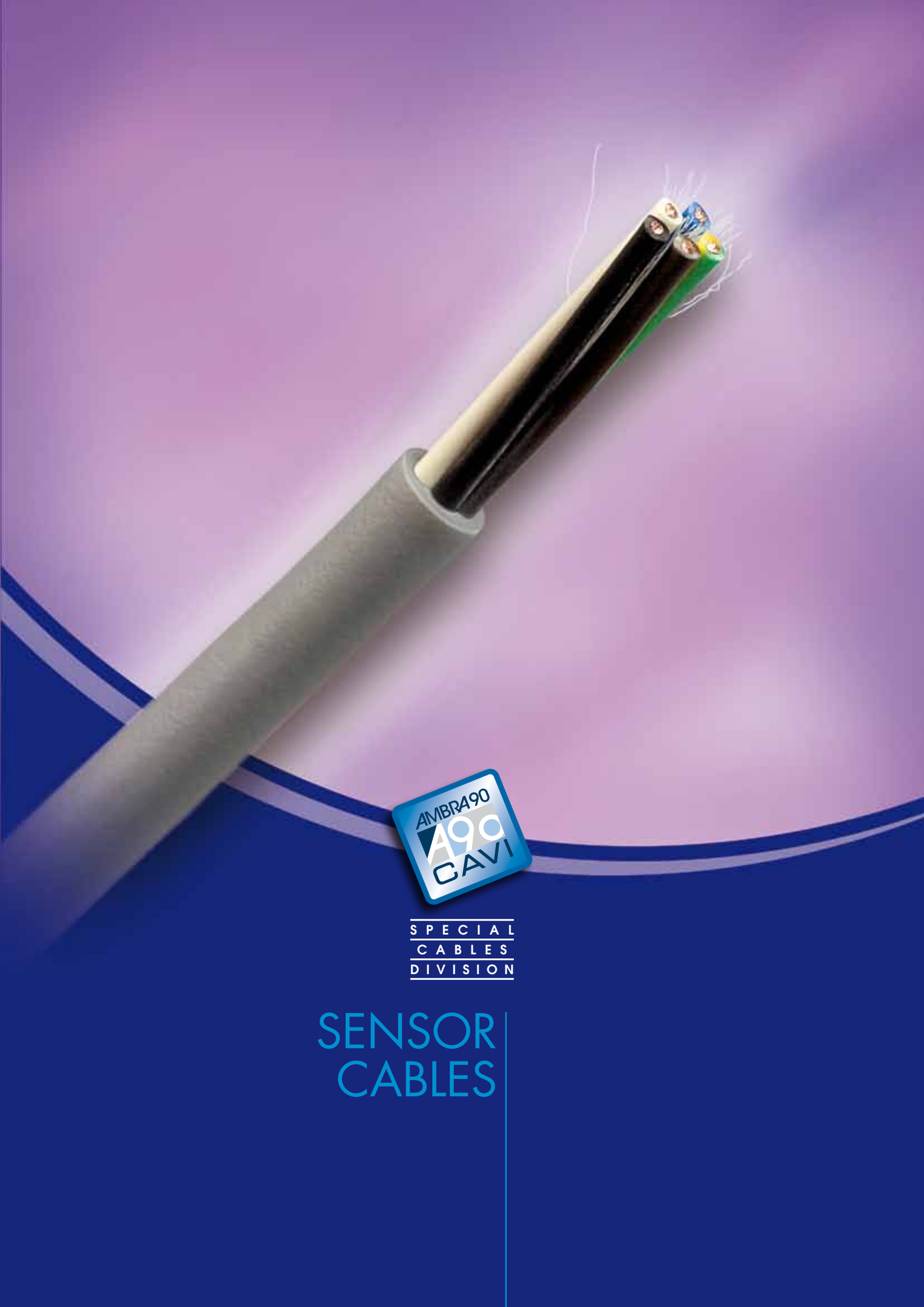
TECHNICAL SPECIFICATIONS

- Operating temperature range: -30°C ÷ +90°C;
- Storage temperature range: -40°C ÷ +90°C;
- Minimum bending radius: 10 times the outer diameter of the cable;
- Use: fixed applications.

REFERENCE STANDARDS

- CEI EN 60228/VDE 0295 Cl.5 Cl.2
- CEI UNEL 00722
- CEI EN 50363-0

Code	Conductor construction n° x mm	Outer nom. (LxH) mm	Copper weight kg/km	Sheath colour	Packaging
A11807	3x1.50	10.90x5.20	80		1000 m reel
A11747	4x1.50	15.90x5.20	110		1000 m reel
A11927	4x1.50 jelly	15.90x5.20	110		1000 m reel
A11897	4x2.00	19.00x5.80	155		1000 m reel
A11877	4x2.00 jelly	19.00x5.80	155		1000 m reel
A11867	4x2.00 jelly	19.00x5.80	155		1000 m reel
A11977	3x4.00	17.10x7.50	190		1000 m reel
A11907	4x4.00	25.00x7.50	240		1000 m reel
A11987	3x6.00	19.10x8.50	270		1000 m reel
A11917	4x6.00	25.90x7.50	300		1000 m reel



AMBRA90 CAVI

SPECIAL CABLES DIVISION

SENSOR CABLES

RoHS

CE

SENSOR CABLES

GENERAL FEATURES

These low voltage cables are applied to capacitive, magnetic and inductive electronic sensors used in the industrial automotive field in automatic machines (for assembly, packaging and special processes, etc.), to photoelectric sensors for household applications, to photoelectric sensors for industrial applications, to barriers around the edges of lifts and automatic doors, etc. These cables have a special lead-free PVC compound or a PUR sheath that gives higher resistance to: UV rays, low temperatures, oil and chemical agents, tears, abrasion and hydrolysis. They are developed in compliance with the main international standards.

REFERENCE STANDARDS

- IEC 60228/VDE 0295 Cl.5 Cl.6
- CEI 20-22 II / CEI 20-37/0

ELECTRICAL SPECIFICATIONS

Section mm²	Test Voltage V	Working Voltage V	Conductor electrical resistance Ω/Km	Min. insulation resistance Ω/Km
0.14	2000	250	136.00	20
0.25	2000	250	78.00	20
0.34	2000	250	52.20	20
0.50	2000	250	39.00	20
0.75	2000	250	26.00	20

MANUFACTURING SPECIFICATIONS

- Class 5 or class 6 bare copper conductors;
- Conductor insulation in lead-free PVC;
- Sheath in a special lead-free PVC compound or in PUR.

TECHNICAL SPECIFICATIONS

- Operating temperature range: -40°C ÷ +85°C;
- Storage temperature range: -40°C ÷ +90°C;
- Minimum bending radius: 12 times the outer diameter of the cable;
- Use: fixed applications;

RoHS

CE

Code	Conductor construction n° x AWG	Conductor Colour	Outer nom. Ø mm	Copper weight kg/km	Sheath colour	Packaging
A77497	2x0.14 JE-YY Oil resistant	Brown/Blue	2.75	10.30		1000 m reel
A77507	3x0.14 JE-YY Oil resistant	Blue/Brown/Black	2.75	11.40		1000 m reel
A78047	3x0.14 JE-Y11Y Matt	Blue/Brown/Black	2.75	11.00		1000 m reel
A77517	3x0.25 JE-YY Oil resistant	Blue/Brown/Black	3.50	19.50		1000 m reel
A77787	3x0.25 JE-9Y11Y Oil resistant - Matt	Blue/Brown/Black	4.10	21.00		1000 m reel
A77527	4x0.25 JE-YY Oil resistant	Blue/Brown Black/White	4.20	27.00		1000 m reel
A77797	4x0.25 JE-9Y11Y Oil resistant - Matt	Blue/Brown Black/White	4.50	26.00		1000 m reel
A78177	5x0.25 JE-YY Oil resistant	Gray/Blue/Brown Black/White	4.50	30.00		1000 m reel
A77567	3x0.34 JE-YY Oil resistant	Blue/Brown/Black	4.30	29.50		1000 m reel
A77577	4x0.34 JE-YY Oil resistant	Blue/Brown Black/White	4.60	35.60		1000 m reel
A77927	5x0.34 JE-Y11Y Oil resistant - Matt	Blue/Brown/Black White/Yellow-Green	6.00	46.00		1000 m reel
A11847	2x0.50 JE-YY	Brown/Blue	4.90	34.70		1000 m reel
A11767	2x0.50 JE-YY	Brown/Blue	4.90	34.70		1000 m reel
A78237	2x0.50 JE-Y11Y	Brown/Blue	5.00	32.00		1000 m reel
A77957	3x0.50 JE-YY Oil resistant	Blue/Brown Yellow-Green	5.10	42.00		1000 m reel

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SPECIAL
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TECHNICAL INFORMATION

PROPERTIES OF MAIN INSULATION MATERIALS

Material	Polyvinyl chloride (PVC)			Polyethylene (PE)			Polypropylene (PP)	Polyurethane (PUR)	Polyester (PETP)
VDE classification	Y			2Y			9Y	11Y	
				LDPE Low density	HDPE High density	PEE foam			
Operating temperature (C°)	-20 +70	-20 +80	-20 +90 (105)	-50 +70	-50 +90	-50 +70	-10 +90	-40 +80	-40 +100
Density (g/ml)	1.2 to 1.45	1.3 to 1.45	1.3 to 1.45	0.92	0.92	0.5 to 0.6	0.91	1.2	1.3
Ultimate tensile strength (N/mm^2)	>12.5	>12.5	>15	>10	>12.5	>3.5	>15	>25	>40
Ultimate elongation (%)	>150	>125	>150	>300	>400	>125	>300	>500	>200
Volume resistance at 20° C (Ωxcm)	10^{12} to 10^{15}			10^{17}			10^{16}	10^{10}	10^{12}
Relative permittivity	3.5 to 7			2.3	2.4	1.5	2.3	5 to 7	3 to 4
Dissipation ratio	$5x10^{12}$ to $1x10^{15}$			$2x10^{-4}$	$3x10^{-4}$	$6x10^{-4}$	$4x10^{-4}$	$2x10^{-2}$	1 to $2.5x10^{-2}$
Fire performance	Self-extinguishing			Flammable			Flammable	Very flammable	Flammable
Resistance to abrasion	Good, depending on hardness			Good			Good	Very good	Good
Water absorption (%)	0.4			>0.1			>0.1	1.5	0.5
Resistance to chemicals	Resistant to oil, grease, acids and solutions Partial resistance to solvents.			Resistant to diluted solutions, acids and petrol, grease, oil, water and several solvents.			Resistant to acids, solutions grease, oil and solvents.	Resistant to oil according to DIN VDE 0472, resistant to hydrolysis.	Resistant to grease, oil and solvents. Partial resistance to acids and solvents.
Special features	Suitable blends allow for special required properties (such as resistance to oil and petrol, resistance to migration).			Zero halogens. PE foam with solid polyethylene skin.			Zero halogens. PE foam with solid polyethylene skin.	High impact resistance. Elasticity.	High elasticity even at low temperatures.

CEI - UNEL 35011 II° ED.

Symbol	Cable reference to standards
	Nature and flexibility of conductor
A	Aluminium
EF	Extra flexible
F	Flexible
FF	Very flexible
R	Rigid (normal or compact)
S	Sectoral cable
SU	Sectoral single wire
U	Round single wire
	Insulation material
C	Impregnated paper
E	Thermoplastic polyethylene based blend
E4	Silicone rubber based blend EI2 T.180°C
G4	Cross linked polyethylene based blend T.85°C
G7	High-modulus ethylene-propylene rubber based blend T.90°C
G8	Ethylene-propylene rubber based blend for cables without protective coating T.85°C
G9	Elastomer rubber based blend also for cables without protective coating T.90°C
G10	Elastomer rubber based blend T.90°C
G19	Cross-linked blend T.90°C
G20	Cross-linked blend T.90°C
M	Mineral insulation
M9	Thermoplastic blend T.90°C
R	Polyvinyl chloride blend TI1 and TI2 T.70°C
R2	Polyvinyl chloride blend R2 T.70°C
R4	Polyamide resin based blend
R5	Fluorocarbon resin based blend
R5F	Blend for cables at high temperatures FEP
R5M	Blend for cables at high temperatures MFA
R5P	Blend for cables at high temperatures PFA
R7	Polyvinyl chloride blend TI3 T.90°C
T4	Silver satin textile
V	Possibly impregnated glass textile
	Concentric conductors and shields
C	Concentric copper conductor
H	Metallic film or carbon film or Al tape screen
H1	Copper screen, made of strips or tapes or wires
H2	Copper plait or braiding screen
H3	Double copper plait or double braiding screen
H4	Corrugated steel longitudinal tape screen
H5	Coated aluminium longitudinal tape screen
Q	Copper sheath

Symbol	Cable reference to standards
	Non-metallic protective coatings
E	Linear thermoplastic material sheath Ez type
E4	Cross-linked polyethylene sheath E4M type
G	Natural and/or synthetic rubber sheath Gy type
G6	Chlorosulphonated polyethylene based sheath G6M type
K	Polychloroprene based or equivalent products Ky, Kn and Kz type sheath
R	Polyvinyl TM1, TM2 and Rz based sheath
R4	Elastomer rubber based blend also for cables without protective coating T.90°C
M1	Thermoplastic-based sheath with low emission of fumes and toxic and corrosive gases
M2	Elastomer-based sheath with low emission of fumes and toxic and corrosive gases - M2
M3	Elastomer-based sheath with low emission of fumes and toxic and corrosive gases - M3
M4	Elastomer-based sheath with low emission of fumes and toxic and corrosive gases - M4
T	Normal textile plait
T2	Special textile plait
	Composition and shape of cable
– – –	No symbol: Single-core cable
O	Joined core cables with or without fillers that form a round cable
D	Parallel cores (flat cable)
X	Core cables joined in a visible spiral
W	Parallel joined core cables with an intermediate groove
W1	Parallel joined core cables with intermediate insulating slot
	Metallic coatings
A1	Corrugated aluminium sheath
F	Cylindrical steel (normally) wire armour
H4	Corrugated steel longitudinal foil shield
H5	Coated aluminium longitudinal foil shield
L	Lead alloy sheath
N	Steel (normally) tape armour
P	Lead non-alloy sheath
Q	Copper sheath
Z	Flat steel (normally) wire armour

DIN 47100

Conductor Colours

COND. No	COLOUR
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red
9	Black
10	Purple
11	Grey / Pink
12	Red / Blue
13	White / Green
14	Brown / Green
15	White / Yellow
16	Yellow / Brown
17	White / Grey
18	Grey / Brown
19	White / Pink
20	Pink / Brown
21	White / Blue
22	Brown / Blue
23	White / Red
24	Brown / Red
25	White / Black
26	Brown / Black
27	Grey / Green
28	Yellow / Grey
29	Pink / Green
30	Yellow / Pink
31	Green / Blue
32	Yellow / Blue
33	Green / Red
34	Yellow / Red
35	Green / Black
36	Yellow / Black
37	Grey / Blue
38	Pink / Blue
39	Grey / Red
40	Pink / Red
41	Grey / Black
42	Pink / Black
43	Blue / Black
44	Red / Black
45	Orange
46	Orange / White
47	Orange / Green
48	Orange / Yellow
49	Orange / Grey
50	Orange / Blue

DIN 47100

For multipolar paired cables

Conductor Colours

COND. No	COLOUR	
	Conductor A	Conductor B
1	White	Brown
2	Green	Yellow
3	Grey	Pink
4	Blue	Red
5	Black	Purple
6	Grey / Pink	Red / Blue
7	White / Green	Brown / Green
8	White / Yellow	Yellow / Brown
9	White / Grey	Grey / Brown
10	White / Pink	Pink / Brown
11	White / Blue	Brown / Blue
12	White / Red	Brown / Red
13	White / Black	Brown / Black
14	Grey / Green	Yellow / Grey
15	Pink / Green	Yellow / Pink
16	Green / Blue	Yellow / Blue
17	Green / Red	Yellow / Red
18	Green / Black	Yellow / Black
19	Grey / Blue	Pink / Blue
20	Grey / Red	Pink / Red
21	Grey / Black	Pink / Black
22	Blue / Black	Red / Black
23	Orange	Orange / White
24	Orange / Green Yellow	Orange /
25	Orange / Grey	Orange / Blue
26	Orange / Black	Orange / Red
27	Orange / Pink	Orange / Purple
28	Purple / White	Purple / Brown
29	Purple / Green	Purple / Yellow
30	Purple / Grey	Purple / Pink
31	Purple / Blue	Purple / Red
32	Purple / Black	Green / Yellow

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Conductor Colours

COND. No	COLOUR
2	Light blue
	Brown
3	Yellow / Green
	Brown
	Light blue
4	Yellow / Green
	Black
	Light blue
	Brown
5	Yellow / Green
	Black
	Light blue
	Brown
	Black
> 5	Yellow / Green
	Black numbered in progression

LEGEND

Cu	Bare copper
CuSn	Tinned copper
FeCu	Copper steel
PE	Polyethylene
PEE	Chemically Expanded Polyethylene Foam
PEG	Expanded Polyethylene Foam (with nitrogen gas injected)
PP	Polypropylene
PET	Polyester
PPE	Foamed Polypropylene
PVC	Polyvinyl chloride
PVC-FR	Flame-retardant Polyvinyl chloride
PUR	Polyurethane
LSZH-FRNC	Low smoke zero halogen, flame retardant, non corrosive
Pet	Polyester foil
Al/Pet	Aluminium/Polyester foil
Al/Pet/Al	Aluminium/Polyester/Aluminium foil
Cu/Pet	Copper/Polyester foil
Kf	Percentage of shield covering
S.R.L	Percentage of shield covering

STANDARD DIN VDE

Symbol	Description
A	Cable for external use
G	Cable for underground laying
J	Installation cable (fixed applications)
JE	Cable for electronics (fixed applications)
Li	Extra-flexible conductor
S	Control and signal cable
b	Armouring
Bd	Bunch stranding
C	Tinned copper braid shield
D	Spiral copper shield
J	Cable with yellow-green earth conductor
(K)	Copper foil with polyester
JZ	Cable with numbered conductors, yellow-green earth conductor
(L)	Aluminium foil bonded with Polyester Al/Pes foil
Lg	Concentric construction
(L)2Y	Aluminium foil bonded with PE
O	Cable without yellow-green earth conductor
OZ	Cable without yellow-green earth conductor, and numbered conductors
PiC	Shielded copper braid pairs
PiMF	Individually shielded pairs with Al/Pes foil
Q	Steel wire braid
(St)	Al/Pes shield
Stli	Copper steel conductor
v	Tinned copper
Yv	PVC-reinforced sheath
2Yv	PE-reinforced sheath
(Z)	Self-supporting steel armouring
H	Zero halogen flame-retardant compound
X	Cross-linked Polyvinyl chloride PVC
2X	Cross-linked Polyethylene (XLPE)
Y	Polyvinyl chloride PVC
Yu	Polyvinyl chloride PVC, flame retardant
Yv	Polyvinyl chloride PVC-reinforced sheath
Yw	Polyvinyl chloride PVC - 90°C
2Y	Polyethylene PE
02Y	Cellular polyethylene PEE
02Y S	Foam-skin insulation
9Y	Polypropylene PP
11Y	Polyurethane PUR

AWG/METRIC CONVERSION TABLE

AWG	STRAND WIRES		CONDUCTOR	
	no. wires	single wire Ø (mm)	Strand Ø	Total sec. (mm²)
10/1	1	2.6	2.6	5.26
10/37	37	0.41	2.8	4.74
10/105	105	0.25	3.2	5.32
12/1	1	2.05	2.05	3.31
12/19	19	0.46	2.3	3.08
12/65	65	0.25	2.3	3.29
14/1	1	1.6	1.6	2.08
14/19	19	0.36	1.8	1.94
14/41	41	0.25	1.96	2.08
16/1	1	1.29	1.29	1.31
16/7	7	0.51	1.52	1.44
16/19	19	0.29	1.5	1.32
18/1	1	1.02	1.02	0.82
18/7	7	0.41	1.22	0.89
18/19	19	0.25	1.27	0.96
20/1	1	0.81	0.81	0.52
20/7	7	0.32	0.96	0.56
20/19	19	0.20	1.02	0.61
22/1	1	0.64	0.64	0.324
22/7	7	0.25	0.76	0.35
22/19	19	0.16	0.78	0.38
24/1	1	0.51	0.51	0.205
24/7	7	0.203	0.61	0.227
24/19	19	0.127	0.64	0.241
26/1	1	0.405	0.405	0.128
26/7	7	0.160	0.483	0.141
26/19	19	0.102	0.533	0.154
28/1	1	0.320	0.320	0.081
28/7	7	0.127	0.381	0.089
28/19	19	0.080	0.406	0.092
30/1	1	0.254	0.254	0.051
30/7	7	0.102	0.305	0.057
32/1	1	0.203	0.203	0.032
32/7	7	0.080	0.234	0.034
34/1	1	0.160	0.160	0.020
34/7	7	0.065	0.195	0.022
36/1	1	0.125	0.125	0.012
36/7	7	0.050	0.150	0.014
38/1	1	0.100	0.100	0.008
40/1	1	0.080	0.080	0.0048
42/1	1	0.065	0.065	0.0030
44/1	1	0.050	0.050	0.0020

CONDUCTORS OF INSULATED CABLES (IEC 60228)

CLASS 1

■ SOLID CONDUCTOR FOR SINGLE- AND MULTI-CORE CABLES

1	2	3	4
Nominal section mm²	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C		
	Circular copper conductors		Circular or sector-shaped aluminium conductors (Ω/Km)
	Bare (Ω/Km)	Coated (Ω/Km)	
0.5	36.0	36.7	–
0.75	24.5	24.8	–
1	18.1	18.2	–
1.5	12.1	12.2	18.10 (2)
2.5	7.41	7.56	12.10 (2)
4	4.61	4.70	7.41 (2)
6	3.08	3.11	4.61 (2)
10	1.83	1.84	3.08 (2)
16	1.15	1.16	1.91 (2)
25	0.727 (1)	–	1.20
35	0.524 (1)	–	0.868
50	0.387 (1)	–	0.641
70	0.268 (1)	–	0.443
95	0.193 (1)	–	0.320
120	0.153 (1)	–	0.253
150	0.124 (1)	–	0.206
185	–	–	0.164
240	–	–	0.125
300	–	–	0.100

(1) See 4.1.2.
(2) Al conductors from 1.50 to 16 mm2; circular cross-section only. See 4.1.3.

CONDUCTORS OF INSULATED CABLES (IEC 60228)

CLASS 2

■ STRANDED CONDUCTORS FOR SINGLE- AND MULTI-CORE CABLES

1	2	3	4	5	6	7	8	9	10
Nominal section mm²	Minimum number of conductor wires						Max. resistance of conductors at 20°C		
	Circular conductors Compact		Circular conductors Non compact		Sectoral conductor		Copper conductors		Alumi-nium conductor (Ω/km)
							Bare wire (Ω/km)	Coated wire (Ω/km)	
	Cu	Al	Cu	Al	Cu	Al			
0.5	7	–	–	–	–	–	36.0	36.7	–
0.75	7	–	–	–	–	–	24.5	24.8	–
1	7	–	–	–	–	–	18.1	18.2	–
1.5	7	–	6	–	–	–	12.1	12.2	–
2.5	7	–	6	–	–	–	7.41	7.56	–
4	7	7 (2)	6	–	–	–	4.61	4.70	7.41
6	7	7 (2)	6	–	–	–	3.08	3.11	4.61
10	7	7	6	–	–	–	1.83	1.84	3.08
16	7	7	6	6	–	–	1.15	1.16	1.91
25	7	7	6	6	6	6	0.727	0.734	1.20
35	7	7	6	6	6	6	0.524	0.529	0.868
50	19	19	6	6	6	6	0.387	0.391	0.641
70	19	19	12	12	12	12	0.268	0.270	0.443
95	19	19	15	15	15	15	0.193	0.195	0.320
120	37	37	18	15	18	15	0.153	0.154	0.253
150	37	37	18	15	18	15	0.124	0.126	0.206
185	37	37	30	30	30	30	0.0991	0.100	0.164
240	61	61	34	30	34	30	0.0754	0.0762	0.125
300	61	61	34	30	34	30	0.0601	0.0607	0.100
400	61	61	53	53	53	53	0.0470	0.0475	0.0778
500	61	61	53	53	53	53	0.0366	0.0369	0.0605
630	91	91	53	53	53	53	0.0283	0.0286	0.0469
800	91	91	53	53	–	–	0.0221	0.0224	0.0367
1000	91	91	53	53	–	–	0.0176	0.0177	0.0291
1200	(1)	(1)	(1)	(1)	–	–	0.0151	0.0151	0.0247
(1400) (3)	(1)	(1)	(1)	(1)	–	–	0.0129	0.0129	0.0212
1600	(1)	(1)	(1)	(1)	–	–	0.0113	0.0113	0.0186
(1600) (3)	(1)	(1)	(1)	(1)	–	–	0.0101	0.0101	0.0165
2000	(1)	(1)	(1)	(1)	–	–	0.0090	0.0090	0.0149

CONDUCTORS OF INSULATED CABLES (CEI 20-29 - IEC 60228)

CLASS 5

■ FLEXIBLE COPPER CONDUCTORS FOR SINGLE- AND MULTI-CORE CABLES

1	2	3	4
Nominal section mm²	**Maximum wire diameter mm**	**Max. resistance of conductor at 20°C**	
		Bare wire (Ω/km)	**Coated wire** (Ω/km)
0.5	0.21	39.0	40.1
0.75	0.21	26.0	26.7
1	0.21	19.5	20.0
1.5	0.26	13.3	13.7
2.5	0.26	7.98	8.21
4	0.31	4.95	5.09
6	0.31	3.30	3.39
10	0.41	1.91	1.95
16	0.41	1.21	1.24
25	0.41	0.780	0.795
35	0.41	0.554	0.565
50	0.41	0.386	0.393
70	0.51	0.272	0.277
95	0.51	0.206	0.210
120	0.51	0.161	0.164
150	0.51	0.129	0.132
185	0.51	0.106	0.108
240	0.51	0.0801	0.0817
300	0.51	0.0641	0.0495
400	0.61	0.0486	0.0654
630	0.61	0.0287	0.0292

CLASS 6

■ FLEXIBLE COPPER CONDUCTORS FOR SINGLE- AND MULTI-CORE CABLES

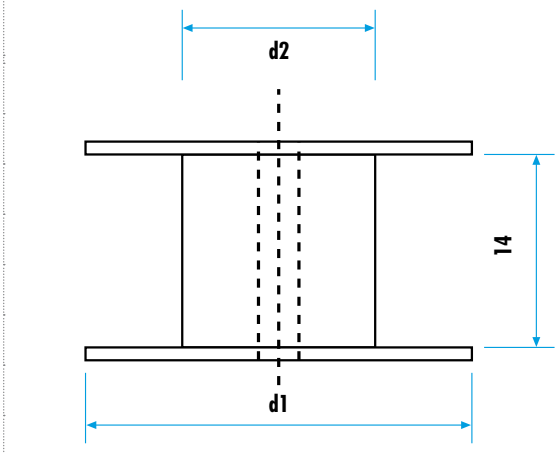
1	2	3	4
Nominal section mm²	**Maximum wire diameter mm**	**Max resistance conductor at 20°C**	
		Bare wire (Ω/km)	**Coated wire** (Ω/km)
0.5	0.16	39.0	40.1
0.75	0.16	26.0	26.7
1	0.16	19.5	20.0
1.5	0.16	13.3	13.7
2.5	0.16	7.98	8.21
4	0.16	4.95	5.09
6	0.21	3.30	3.39
10	0.21	1.91	1.95
16	0.21	1.21	1.24
25	0.21	0.780	0.795
35	0.21	0.554	0.565
50	0.31	0.386	0.393
70	0.31	0.272	0.277
95	0.31	0.206	0.210
120	0.31	0.161	0.164
150	0.31	0.129	0.132
185	0.41	0.106	0.108
240	0.41	0.0801	0.0817
300	0.11	0.0641	0.0654

REEL

CAPACITY OF REEL (m)

Wire Ø (mm)	IMB005	IMB002	IMB003	IMB004	IMB006	IMB001	IMB011	IMB018
4	600	1500	2800	4300	7300	12000	29500	21000
5	350	950	1800	2700	4700	7700	18900	13500
6	250	650	1200	1900	3200	5300	13000	9400
7		500	900	1400	2400	3900	9600	6900
8		350	700	1000	1800	3000	7300	5200
9		300	550	840	1400	2300	5800	4100
10			440	680	1100	1900	4700	3300
11			350	550	950	1500	3800	2700
12			300	470	800	1300	3200	2300
13			250	400	680	1100	2700	1900
14				340	590	950	2400	1700
15				300	500	850	2050	1400

DIMENSION OF REEL



CODE	d1 (mm)	d2 (mm)	14 (mm)
IMB005	400	160	100
IMB002	400	160	260
IMB003	500	200	300
IMB004	600	200	300
IMB006	700	315	420
IMB001	800	315	500
IMB018	1000	450	590
IMB011	1200	630	630

X - Performance

CUSTOM CABLES

Cables to meet your needs

Special products can be developed by drawing on all the experience, know-how and organizational abilities of the AMBRA90 brand. We can custom design and manufacture cables for any purpose.

AMBRA90 has been UNI EN ISO 9001:2008 certified by CSQ.

AMBRA90 CAVI

SPECIAL CABLES DIVISION

X - Performance

CUSTOMISED CABLE REQUEST FORM

Please send a copy by fax to
+39 049 9597973

Date .....

Company .....

Company ref. no. .....

Cable name: .....

TYPE OF CABLE
☐ Coax ☐ Lan ☐ Multi-core ☐ Telephone ☐ Audio ☐ Other .....
No. conductors or pairs: ..... Nominal section: .....
Working voltage: .....

CONDUCTORS
☐ Red ☐ Tinned ☐ Steel Copper ☐ Other .....
Type of conductor: ☐ Single-wire ☐ Multi-wire ☐ Strand

INSULATION
☐ PVC ☐ PP ☐ LSZH ☐ Other .....
Insulation colour: ☐ One colour ☐ Two-colour ☐ Ringed ☐ Numbered
☐ Other .....

TWISTED CONDUCTORS
☐ Yes ☐ No

SHIELDING PAIRS
☐ Al/Pet foil ☐ Al/Pet/Al foil ☐ Braid Other ☐ Other .....
Type: ☐ Cu ☐ CuSn ☐ Other .....

DRAIN WIRE
☐ Yes ☐ No

PES FOIL AFTER JOINING
☐ Yes ☐ No

FULL SHIELDING
☐ Al/Pet tape ☐ Al/Pet/Al tape ☐ Braid ☐ Other .....
Type: ☐ Cu ☐ CuSn ☐ Other .....

STRIPPING WIRE
☐ Yes ☐ No

OUTER SHEATH
☐ PVC ☐ LSZH ☐ PE ☐ PUR ☐ Other .....

SHEATH COLOUR
..... **Sheath properties:** ☐ Shiny ☐ Matt ☐ Other .....

TYPE OF INSTALLATION
☐ Inside ☐ Outside ☐ Mobile

Special requests, if any (resistance, capacitance, impedance, inductance) .....

Compliance to special regulations, if any .....

Packaging, Labelling, Branding. .....

If feasible, please attach a sample of the cable (min. 50 cm)

NOTES

FANTON®
CABLES AND ELECTRICAL COMPONENTS

The **power** of innovation

Energy from values

Daily commitment to timeless quality.

Designing new products and new solutions, testing safer, longer-lasting materials, searching for new shapes and designs: it is important to realize that our work helps improve the work of others. It is important for the development of an industrial organization in search of values that can help it cope with the new challenge posed by globalization and the pursuit of quality.
It is important for the assumption of responsibility in delivering products that are required to retain their technological value for years. It is important for the expansion and strengthening of a continuous improvement process. The products in this catalogue stand as testimony to the progress and advances that every day, through our efforts, allow millions of people around the world to live their lives while keeping in touch with each other.
It is the mark of a successful brand that is recognized and appreciated by consumers for the hallmarks of function, strength and quality borne by its products: products that, for three generations, have consistently characterized the range of Italian-made offerings both in the domestic market and across Europe.

From the idea to the finished product

Every successful product is the result of a rigorous design and production process.
Fanton S.p.A. controls this process from start to finish, with its own R&D department and production facilities.

Quality and safety

This is the basic criterion for everything in the company.
Every product is the result of careful design and testing for quality and safety – to standards beyond those required by established regulations.

Company

Fanton Spa sis located in an area of 30,000 m2, 20,000 of which are covered. It relies on the professionalism and expertise of its carefully selected personnel that includes 150 internal staff.

FME ELECTRICAL COMPONENTS FACTORY

FANTONET CABLING SYSTEM

AMBRA 90 CAVI SPECIAL CABLES DIVISION

Innovation

Fanton S.p.A. stands out from the competition for its continuous innovation and upgrading of its product line, thus staying ahead of the curve in this challenging market with its highly demanding clientele.

Sales network

The FME, AMBRA 90 CAVI and FANTONET brands have grown together with a highly qualified network of agents, created a well-established presence in Italy, Europe, South America and North Africa, with commercial strategies finely tuned to meet the requirements of its local markets.

Automated warehousing

This is a testimony to Fanton S.p.A.'s commitment to growth. The new warehouse, which boasts the latest warehousing technology, puts the customer first with fast order filling and stock turnover.

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information and locate all our sales
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thanks to the table of contents
divided by product category
which links directly to
the respective pages.
To order the CD, visit
www.fanton.com
or call our Call Center.

...to products

Fanton S.p.A. offers a full range of products, from electrical supplies to special cables and cabling systems. The numerous new products introduced in this edition testify to our commitment to continuous improvement in line with the development of the market.

Electrical supplies

FME Catalogue

FME is Fanton S.p.A.'s historic brand. With our enormous experience and know-how, developed over many years of manufacturing, we are proud to present our new, expanded catalogue.
The catalogue contains a vast range of new products, covering the entire range from residential to industrial use.
Printed in A4 for ease of filing, the catalogue is full of images and tables which clearly illustrate the products and their many variants.
It is divided into two sections: the first covers electrical supplies for the industrial market, the second materials for civil applications.

INDUSTRIAL product line: Plugs, cable winders, extensions, «Golia Empty» winder, cable winder spares, junction panels, lighting.
CIVIL product line: Multiplugs, plugs, cable winders, self-retracting cable winders, extensions, self-service cables, telephony/TV accessories, Satv accessories, TV supplies, lighting products.

Cabling systems

FANTONET Catalogue

The FANTONet catalogue has reached its fourth edition and aims to offer a complete range of products for constructing and installing quality cabling systems. The range of products is vast and includes installation products, work area accessories and instrumentation.
The catalogue aims to provide everything needed to create the installation which best suits your customer's requirements.
The catalogue not only lists our products, but also includes technical sheets which answer the questions most commonly asked by installation technicians about regulatory issues and installation methods.

Contents: Concept System, Lan Cables, Optical Fibre Cables, «Greenet» Enclosures and Panels, Kit-Net, Enclosure Accessories, Work Area Accessories, Phone Systems, 5e Data Systems, 6e Data Systems, Light Systems, Get Net Active Equipment, C-Net Active Equipment, UPS, Instrumentation.

Special cables

AMBRA 90 CAVI Catalogue

The AMBRA 90 CAVI catalogue lists a vast selection of special cables, and the new edition includes a variety of new products, including coaxial cables for digital terrestrial TV, Profibus cables, electronics cables, fire-retardant cables and Superflex cables. Ambra 90 Cavi adopts the most advanced production technology. In order to meet the requirements of an increasingly demanding and dynamic market, the catalogue also offers the option to order custom cables. Each cable listed in the catalogue is illustrated with photographs, technical data tables and commercial packaging options.

Contents: DigiSatv cables, RG cables, LAN cables, Telecommunications cables, Burglar alarm and alarm cables, Fire-retardant cables, Hi-Fi cables, Extra-flex cables, Superflex cables, Multipole cables with copper braid screen, Data transmission cables, Electronics cables, Profibus cables and Custom cables

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ELECTRICAL COMPONENTS FACTORY

SPECIAL CABLES DIVISION

CABLING SYSTEM

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