

Yangına Dayanıklı Kablolar
Fire Resistance Cables

Veri İletim Kabloları
Data Cables

PUR Kabloları
PUR Cables

Esnak Alüminyum Enerji Kabloları
Flexible Aluminium Energy Cables

Kauçuk Kabloları
Rubber Cables

Gemi ve Yat Kabloları
Ship Type and Yacht Cables

Enstrümantasyon Kabloları
Instrumentation Cables

Yenilenebilir Enerji Kabloları
Renewable Energy Cables

Kumanda Kontrol Kabloları
Control Cables

Seslendirme Kabloları
Audio Cables

Profibus Kabloları
Profibus Cables

kablem[®]
CABLE

kablem
CABLE

www.kablem.com.tr

ABOUT US

Owing to working with automotive sector since the establishment, together with the cable brand "KABLEM" ECS is specialized in the fields of process discipline, quality standards, customer management, process management, just in time delivery system and started to gain an important place in the market. As an owner of system certificates[ISO 9001, TS16949 , ISO 14001 and OHSAS 18001] and capability of making customized designs, Kablem made difference between the rivals in the sector.

As Kablem Cable , within the frame of world standards , one of our main target is to lead to new ideas and meet the requirements of sector by taking advantage of new technology opportunities. Established the business by abiding these principles, we improve ourselves continuously by taking into account our environmental responsibilities.

QUALITY CERTIFICATES



ISO 9001



ISO 14001



OHSAS 18001



ISO TS 16949



İÇİNDEKİLER / INDEX

Kauçuk Kabloları

Rubber Cables

H05RN-F	4
H05RR-F	5
H07RN-F	6
H01N2-D	7
H07BQ-F	8

PUR Kabloları

PUR Cables

PVC-PUR CABLE	10
TPE-PUR CABLE	11
PP-PUR CABLE	12

Yangına Dayanıklı Kablolar

Fire Resistant Cables

LIHCH FE180 PH120	14
LIH [St]H FE180 PH120.....	15
LIH[St]CH FE180 PH120	16
JE-H[St]H...Bd FE180 PH120	17
JE-H[St]H...Bd FE180 E30-E90 PH120	18

Enstrümantasyon Kabloları

Instrumentation Cables

RE-Y[St]Y-fl	20
RE-Y[St]Y-PIMF	21
RE-2Y[St]Y-fl	22
RE-2Y[St]Y-PIMF	23
RE-2Y[St]H / RE-2X[St]H-MP	24-25
RE-2Y[St]HSAWAH / RE-2X[St]HSAWAH	26-27
RE-2Y[St]HSAWAH-PIMF / RE-2X[St]HSAWAH-PIMF	28-29
RE-2Y[St][St]Y-fl-MP	30

Profibus Kabloları

Profibus Cables

PROFIBUS PA	32
PROFIBUS CAN	33
PROFIBUS L2	34
PROFIBUS L2 OUTDOOR	35
PROFIBUS PA-PIMF / SWB	36

Veri İletim Kabloları

Data Cables

LIYY	38
LIYCY	39
LIY[St]Y	40
LIH[St]H	41
LIHH	42
LIHCH	43

Veri İletim Kabloları

Data Cables

JYY	44
JHH	45
JY[St]Y	46
JH[St]H	47
CAT 6e-UTP	48
HF-CAT 6e-UTP	49
LI2Y[St]Y	50

Kumanda Kontrol Kabloları

Control Cables

HSLH	52
HSLHCH	53
YSLY	54
YSLYCY	55
H05VV5-F [NYSLYÖ-JZ/OZ]	56
H05VVC4V5-K [NYSLYCYÖ-JZ/OZ]	57
YSLYSY	58
2YSLCY-J	59
0,6/1 kV CONTROL CABLE	60
HIGH FLEXIBLE CONTROL CABLE	61
YSLCY	62

Seslendirme Kabloları

Audio Cables

MİKROFON KABLoları	64
HOPARLÖR KABLoları	65
AES/EBU CABLES	66

Esnek Alüminyum Enerji Kabloları

Flexible Aluminium Energy Cables

FLALRY FLEXIBLE ALUMINIUM CABLE.....	68
--------------------------------------	----

Gemi ve Yat Kabloları

Ship Type and Yacht Cables

MY.....	70
MYCY.....	71
DOLPHINE POWER-YACHT.....	72

Yenilenebilir Enerji Kabloları

Renewable Energy Cables

SOLAR ENERGY CABLE / PV1-F.....	74
WIND ENERGY TURBINE CABLE.....	75
HEAT TRACKING CABLES.....	76

Kauçuk Kabloları

Rubber Cables

H05RN-F

Özellikler / Features

300/500 V Kauçuk izoleli ağır işletme şartlarına dayanıklı kabloları

300/500 V Rubber insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli fleksible bakır
2. **İzole:** Kauçuk
3. **Kılıf:** Kauçuk

1. **Conductor:** Flexible copper
2. **Insulation:** Rubber
3. **Sheath:** Rubber

Nominal Kesit	Bakır Fakörü	Kablo Dış Çapı [Yaklaşık]	Net Ağırlık [Yaklaşık]	20 °C'de İletken DA Direnci	Yüzey Üzerinde Akım Taşıma Kapasitesi	Sevk Uzunluğu [Yaklaşık]
Nominal Cross-section	Min. Insulation Thickness	Overall Diameter of Cable [Approx]	Net Weight [Approx.]	Conductor DC Resistance at 20 °C	Operating Carrying Capacity on Surface	Delivery Length [Approx.]
mm ²	1000 m	mm	kg/km	ohm/km	A	m
2 Damarlı / 2 cores						300/500 V
2 x 0,75	14	6,3	65	26,7	6	1000
2 x 1	19	6,8	77	20,0	10	1000
2 x 1,5	29	8,3	114	13,7	16	1000
2 x 2,5	48	9,7	159	8,21	25	1000
2 x 4	77	10,5	198	5,09	32	1000
3 Damarlı / 3 cores						300/500 V
3 x 0,75	22	6,9	80	26,7	6	1000
3 x 1	29	7,1	89	20,0	10	1000
3 x 1,5	43	8,8	133	13,7	16	1000
3 x 2,5	72	1,3	187	8,21	25	1000
3 x 4	116	12,1	268	5,09	32	1000
4 Damarlı / 4 cores						300/500 V
4 x 0,75	29	7,4	93	26,7	6	1000
4 x 1	38	7,8	107	20,0	10	1000
4 x 1,5	58	9,8	164	13,7	16	1000
4 x 2,5	96	11,5	231	8,21	25	1000
4 x 4	154	13,4	330	5,09	32	1000



H05RR-F

Özellikler / Features

300/500 V Kauçuk izoleli ağır işletme şartlarına dayanıklı kabloları

300/500 V Rubber insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli fleksible bakır
2. **İzole:** Kauçuk
3. **Kılıf:** Kauçuk

1. **Conductor:** Flexible copper
2. **Insulation:** Rubber
3. **Sheath:** Rubber

Nominal Kesit	Bakır Fakörü	Kablo Dış Çapı [Yaklaşık]	Net Ağırlık [Yaklaşık]	20 °C'de İletken DA Direnci	Yüzey Üzerinde Akım Taşıma Kapasitesi	Sevk Uzunluğu [Yaklaşık]
Nominal Cross-section	Min. Insulation Thickness	Overall Diameter of Cable [Approx]	Net Weight [Approx.]	Conductor DC Resistance at 20 °C	Operating Carrying Capacity on Surface	Delivery Length [Approx.]
mm ²	1000 m	mm	kg/km	ohm/km	A	m
2 Damarlı / 2 cores						300/500 V
2 x 0,75	14	6,3	65	26,7	6	1000
2 x 1	19	6,8	77	20,0	10	1000
2 x 1,5	29	8,3	114	13,7	16	1000
2 x 2,5	48	9,7	159	8,21	25	1000
2 x 4	77	10,5	198	5,09	32	1000
3 Damarlı / 3 cores						300/500 V
3 x 0,75	22	6,9	80	26,7	6	1000
3 x 1	29	7,1	89	20,0	10	1000
3 x 1,5	43	8,8	133	13,7	16	1000
3 x 2,5	72	1,3	187	8,21	25	1000
3 x 4	116	12,1	268	5,09	32	1000
4 Damarlı / 4 cores						300/500 V
4 x 0,75	29	7,4	93	26,7	6	1000
4 x 1	38	7,8	107	20,0	10	1000
4 x 1,5	58	9,8	164	13,7	16	1000
4 x 2,5	96	11,5	231	8,21	25	1000
4 x 4	154	13,4	330	5,09	32	1000

H07RN-F

Özellikler / Features

450/750 V Kauçuk izoleli ağır işletme şartlarına dayanıklı kabloları

450/750 V Rubber insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli fleksible bakır
2. **İzole:** Kauçuk
3. **Kılıf:** Kauçuk

1. **Conductor:** Flexible copper
2. **Insulation:** Rubber
3. **Sheath:** Rubber

Nominal Kesit	Bakır Fakörü	Kablo Dış Çapı [Yaklaşık]	Net Ağırlık [Yaklaşık]	20 °C'de İletken DA Direnci	Yüzey Üzerinde Akım Taşıma Kapasitesi	Sevk Uzunluğu [Yaklaşık]
Nominal Cross-section	Min. Insulation Thickness	Overall Diameter of Cable [Approx]	Net Weight [Approx.]	Conductor DC Resistance at 20 °C	Operating Carrying Capacity on Surface	Delivery Length [Approx.]
mm ²	1000 m	mm	kg/km	ohm/km	A	m
1 Damarlı / 1 cores						450/750 V
1 x 16	154	12,1	294	1,21	79	1000
1 x 25	240	14,0	416	0,78	104	1000
1 x 35	336	16,1	563	0,554	129	1000
1 x 50	480	18,3	760	0,386	162	1000
1 x 70	372	20,7	1016	0,282	202	1000
2 Damarlı / 2 cores						450/750 V
2 x 1,5	29	9,3	139	13,3	19	1000
2 x 2,5	48	10,9	194	7,98	26	1000
2 x 4	77	12,6	166	4,95	34	1000
2 x 6	115	14,2	357	3,3	43	1000
2 x 10	192	20,5	665	1,91	60	1000
3 Damarlı / 3 cores						450/750 V
3 x 1,5	43	10,0	165	13,3	15,5	1000
3 x 2,5	72	11,7	231	7,98	21	1000
3 x 4	115	13,5	319	4,95	29	1000
3 x 6	173	15,2	433	3,3	36	1000
3 x 10	288	22,0	863	1,91	51	1000
3 ½ Damarlı / 3 ½ cores						450/750 V
3 x 25 / 16	874	31,5	1825	0,78	92	1000
3 x 35 / 16	1162	36,0	2387	0,554	114	1000
3 x 50 / 25	1680	41,8	3347	0,386	143	1000
3 x 70 / 35	2352	46,4	4306	0,282	178	500
3 x 150 / 70	3216	53,1	5720	0,206	210	500



H01N2-D

Özellikler / Features

300/500 V Kauçuk izoleli ağır işletme şartlarına dayanıklı kaynak kabloları

300/500 V Rubber insulation welding cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli çok fleksible bakır
2. **Ayırıcı:** Pes Bant
3. **Kılıf:** Kauçuk

1. **Conductor:** Flexible copper
2. **Sperator:** Pes Tape
3. **Sheath:** Rubber

Nominal Kesit	Bakır Fakörü	Kablo Dış Çapı (Yaklaşık)	Net Ağırlık (Yaklaşık)	20 °C'de İletken DA Direnci	Yüzey Üzerinde Akım Taşıma Kapasitesi	Sevk Uzunluğu (Yaklaşık)
Nominal Cross-section	Min. Insulation Thickness	Overall Diameter of Cable [Approx]	Net Weight [Approx.]	Conductor DC Resistance at 20 °C	Operating Carrying Capacity on Surface	Delivery Length [Approx.]
mm ²	1000 m	mm	kg/km	ohm/km	A	m
H01N2-D						100/100 V
10	96	8,4	146	1,910	100	1000
16	154	9,9	214	1,210	135	1000
25	240	11,4	307	0,780	180	1000
35	336	12,7	408	0,554	225	1000
50	480	14,8	570	0,386	285	1000
70	672	17,2	791	0,272	355	1000
95	912	19,5	1030	0,206	430	1000
120	1152	20,2	1256	0,161	500	1000
150	1440	23,6	1653	0,129	580	1000

H07BQ-F

Özellikler / Features

450/750 V Kauçuk izoleli PUR kılıflı ağır işletme şartlarına dayanıklı kablolar

450/750 V Rubber insulation PUR sheathing cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli fleksible bakır
2. **İzole:** Kauçuk
3. **Kılıf:** TPU

1. **Conductor:** Flexible copper
2. **Insulation:** Rubber
3. **Sheath:** TPU

Cable Design

Conductor Material	Copper
Conductor Flexibility	Flexible class 5
Insulation	Rubber
Outer Sheath	TPU [special polyurethane]
Halogen free	Yes
Lead Free	Yes

Technical Data

Cable Flexibility	Flexible
Mechanical resistance to impacts	Very good
Operating temperature, range	-40 .. 90°C
Max. conductor temperature in service	90°C
Weather resistance	Good
Oil resistance	Yes
Chemical resistance	Good



PUR Kabloları

PUR Cables

PVC-PUR CABLE

Özellikler / Features

300/500 V PVC izoleli PUR kılıflı ağır işletme şartlarına dayanıklı kablolar

300/500 V PVC insulation PUR sheathing cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli fleksible bakır
2. **İzole:** PVC
3. **Kılıf:** PUR

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Sheath:** PUR

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound , TI2
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of optimum pitch
Inner Sheath	PVC compound
Outer sheath	PUR compound, 11YM1
Sheath colour	RAL 7001, Orange

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13 VDE 0245-102, DIN VDE 0282-10 (Designed according to)
Insulation resistance	Min. 50 Mohm.km
Rated voltage U₀/U	300 / 500V
Test voltage	4000 V
Temperature range	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Min. bending radius	Fixed: 4 x D; Mobile: 10 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1



TPE-PUR CABLE

Özellikler / Features

300/500 V TPE izoleli PUR kılıflı ağır işletme şartlarına dayanıklı kablolar

300/500 V TPE insulation PUR sheathing cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli çok fleksible bakır
2. **İzole:** TPE
3. **Kılıf:** PUR

1. **Conductor:** Flexible copper
2. **Insulation:** TPE
3. **Sheath:** PUR

Cable Design

Conductor	Extra flexible copper wires, plain; IEC 60228 Class 6, TS/DIN EN 60228 Class 6
Insulation	Speacial compound, TPE-E
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of shorten optimum pitch
Separator	Textile bandaging, at each lay-up layer
Outer sheath	PUR compound, 11YM1
Sheath colour	RAL 7001, Orange

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13DIN VDE 0282-10 (Designed according to)
Insulation resistance	Min. 50 Mohm.km
Rated voltage Uo/U	300 / 500V
Test voltage	2000 V
Temperature range	Fixed: - 50 oC ~ + 80 oC; Mobile: - 40 oC ~ + 70 oC
Min. bending radius	Fixed: 4 x D; Mobile: 7,5 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
Oil test	IEC 60811-2-1

PP-PUR CABLE

Özellikler / Features

300/500 V PP izoleli PUR kılıflı ağır işletme şartlarına dayanıklı kablolar

300/500 V PP insulation PUR sheathing cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli fleksible bakır
2. **İzole:** PP
3. **Kılıf:** PUR

1. **Conductor:** Flexible copper
2. **Insulation:** PP
3. **Sheath:** PUR

Cable Design

Conductor	Extra flexible copper wires, plain; IEC 60228 Class 6, TS/DIN EN 60228 Class 6
Insulation	PP compound, 9Y
Core identification	Numbered cores or colour coded cores
Lay-up	Cores laid up in layers of shorten optimum pitch
Separator	Textile bandaging, at each lay-up layer.
Outer sheath	PUR compound, 11YM1
Sheath colour	RAL 7001, Grey

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13DIN VDE 0282-10 (Designed according to)
Insulation resistance	Min. 50 Mohm.km
Rated voltage U₀/U	300 / 500V
Test voltage	2000 V
Temperature range	Fixed: - 30 oC ~ + 80 oC; Mobile: - 5 oC ~ + 70 oC
Min. bending radius	Fixed: 4 x D; Mobile: 7,5 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
Oil test	IEC 60811-2-1



Yangına Dayanıklı Kablolar

Fire Resistant Cables

LIHCH FE180 PH120

Özellikler / Features

300/500 V Seramikleşen silikon izoleli HFFR kılıflı yangın ortamında çalışabilen bakır ekranlı data kabloları

300/500 V ceramicable silicone insulation HFFR copper screen at data cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli fleksible bakır
2. **İzole:** Seramikleşen silikon
3. **Seperatör:** Cam elyaf bant
4. **Ekran:** Kalaylı bakır
5. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** Ceramicable silicone
3. **Separator:** Fiber glass tape
4. **Screen:** Cu/Sn copper
5. **Sheath:** HFFR

Cable Design

Conductor	Stranded bare copper wires [IEC/BS/EN 60228, VDE 0295 class 5]
Insulation	Fire resistant silicon rubber [BS 7655 E12] colors:Up to 5 cores DIN-47100 [for more than 5 cores white core/black numbered]
Flame Barrier	Fiber Glass Tape
Shielding	Tinned Copper Wire Braiding [70% Coverage] [EN 50288]
Outer Sheath	HFFR, Orange [RAL 2004], BS/EN 50290-2, VDE 0207 HM2, BS 7655 LTS1 / LTS3 [other colors upon request]

Technical Data

Min. Bending Radius	Fixed 8 x Cable Diameter, Flexing 15 x Cable Diameter
Conductor Resistance(max.)	0.50mm ² --39 ohm/km; 0.75mm ² --26 ohm/km; 1.00mm ² --19.5 ohm/km; 1.50mm ² --13.3 ohm/km; 2.50mm ² --7.98 ohm/km
Operating Voltage	300 V/500 V
Test Voltage (50 Hz)	2000 V
Insulation Resistance	>200 M.ohmxkm
Temperature Range	Fixed -30 °C.....+90 °C Flexible -5 °C+60 °C
Flame test	IEC/EN/BS/DIN 60332-1-2 [VDE 0482-332-1-2],IEC/TS/BS/EN 60332-3-24
Fire Test	IEC 60331, BS 6387 C, BS/EN 50200 PH90
Smoke Density	TS/BS/IEC/EN 61034-1+2
Corrosive Gases Measurement	IEC 60754-2 , BS/EN 50267



LIH[St]H FE180 PH120

Özellikler / Features

300/500 V Seramikleşen silikon izoleli HFFR kılıflı yangın ortamında çalışabilen alüminyum bant ekranlı data kabloları

300/500 V ceramicable silicone Insulation HFFR Alpet tape screen at data cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli fleksible bakır
2. **İzole:** Seramikleşen silikon
3. **Seperatör:** Cam elyaf bant
4. **Ekran:** Alpet bant
5. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** Ceramicable silicone
3. **Separator:** Fiber glass tape
4. **Screen:** Alpet Band
5. **Sheath:** HFFR

Cable Design

Conductor	Stranded bare copper wires [IEC/BS/EN 60228, VDE 0295 class 5]
Insulation	Fire resistant silicon rubber [BS 7655 EI2] colors:Up to 5 cores DIN-47100 [for more than 5 cores white core/black numbered]
Flame Barrier	Fiber Glass Tape
Shielding	Aluminium laminated polyester tape + Stranded tinned copper drain wire
Outer Sheath	HFFR, Orange [RAL 2004], BS/EN 50290-2, VDE 0207 HM2, BS 7655 LTS1 / LTS3 [other colors upon request]

Technical Data

Min. Bending Radius	Fixed 7.5 x Cable Diameter, Flexing 15 x Cable Diameter
Conductor Resistance(max.)	0.50mm ² --39 ohm/km; 0.75mm ² --26 ohm/km; 1.00mm ² --19.5 ohm/km; 1.50mm ² --13.3 ohm/km; 2.50mm ² --7.98 ohm/km
Operating Voltage	300 V/500 V
Test Voltage (50 Hz)	2000 V
Insulation Resistance	>200 M.ohmxkm
Temperature Range	Fixed -30 °C.....+90 °C Flexible -5 °C+60 °C
Flame test	IEC/EN/BS/DIN 60332-1-2 [VDE 0482-332-1-2],IEC/TS/BS/EN 60332-3-24
Fire Test	IEC 60331, BS 6387 C, BS/EN 50200 PH90
Smoke Density	TS/BS/IEC/EN 61034-1+2
Corrosive Gases Measurement	IEC 60754-2 , BS/EN 50267

LIH[St]CH FE180 PH120

Özellikler / Features

300/500 V Seramikleşen silikon izoleli HFFR kılıflı yangın ortamında çalışabilen bakır ve alüminyum ekranlı data kabloları

300/500 V ceramicable silicone insulation HFFR copper + Alpet tape screen at data cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli fleksible bakır
2. **İzole:** Seramikleşen silikon
3. **Seperatör:** Cam elyaf bant
4. **Ekran:** Kalaylı bakır ve alüminyum bant
5. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** Ceramicable silicone
3. **Separator:** Fiber glass tape
4. **Screen:** Cu/Sn copper + Alpet tape
5. **Sheath:** HFFR

Cable Design

Conductor	Stranded bare copper wires [IEC/BS/EN 60228, VDE 0295 class 5]
Insulation	Fire resistant silicon rubber [BS 7655 EI2] colors:Up to 5 cores DIN-47100 [for more than 5 cores white core/black numbered]
Flame Barrier	Fiber Glass Tape
1. Screen	Aluminium laminated polyester tape 100% coverage
2. Screen	Tinned copper wire braiding, coverage min. 60%
Outer Sheath	HFFR, Orange [RAL 2004], BS/EN 50290-2, VDE 0207 HM2, BS 7655 LTS1 / LTS3

Technical Data

Min. Bending Radius	Fixed 7.5 x Cable Diameter, Flexing 15 x Cable Diameter
Conductor Resistance(max.)	0.50mm ² --39 ohm/km; 0.75mm ² --26 ohm/km; 1.00mm ² --19.5 ohm/km; 1.50mm ² --13.3 ohm/km; 2.50mm ² --7.98 ohm/km
Operating Voltage	300 V/500 V
Test Voltage (50 Hz)	2000 V
Insulation Resistance	>200 M.ohmxkm
Temperature Range	Fixed -30 °C.....+90 °C Flexible -5 °C+60 °C
Flame test	IEC/EN/BS/DIN 60332-1-2 [VDE 0482-332-1-2],IEC/TS/BS/EN 60332-3-24
Fire Test	IEC 60331, BS 6387 C, BS/EN 50200 PH90
Smoke Density	TS/BS/IEC/EN 61034-1+2
Corrosive Gases Measurement	IEC 60754-2 , BS/EN 50267



JE-H[St]H...Bd FE180 PH120

Özellikler / Features

300 V Seramikleşen silikon izoleli HFFR kılıflı yangın ortamında çalışabilen alüminyum bant ekranlı haberleşme kabloları

300 V ceramicable silicone insulation HFFR Alpet tape screen at telecommunication cables

Kablo Yapısı / Cable Structure

1. **İletken:** Solid bakır
2. **İzole:** Seramikleşen silikon
3. **Seperatör:** Cam elyaf bant
4. **Ekran:** Alpet bant
5. **Kılıf:** HFFR

1. **Conductor:** Solid copper
2. **Insulation:** Ceramicable silicone
3. **Separator:** Fiber glass tape
4. **Screen:** Alpet tape
5. **Sheath:** HFFR

Cable Design

Conductor	Solid bare copper [IEC/BS/EN 60228, VDE 0295]
Insulation	Fire resistant silicon rubber [HD 22.1, BS 7655 EI2] [colors VDE 0815 Blue/Red ; Gray/Yellow ; Green/Brown ; White/Black] 4 pairs laid up to a bundle, bundles identified by spiral numbered or colored polyester tape, bundles laid up in layers. [Two pairs laid up as a star quad]
Separator	Polyester tape
Flame Barrier	Fiber Glass Tape
Drain Wire	0.80 mm Solid tinned copper
Shielding	Aluminium laminated polyester tape
Outer Sheath	HFFR, Orange [RAL 2004], BS/EN 50290-2, VDE 0207 HM2, BS 7655 LTS1 / LTS3

Technical Data

Min. Bending Radius	Fixed 7.5 x Cable Diameter, Flexing 12 x Cable Diameter
Conductor Resistance(max.)	0.80mm ² --36.6 Ω /km; 1mm ² --18 Ω /km; 1.50mm ² --12.1 Ω /km
Operating Voltage	300 V
Test Voltage [50 Hz]	2000 V-500 V
Insulation Resistance	>200 M.ohmxkm
Capacitance(800Hz)(max.)	120 nF/km
Capacitance Unbalance(max)(800Hz)	200 pF/100m
Temperature Range	Fixed -30 °C+80 °C Flexible -5 °C+60 °C
Flame test	IEC/EN/BS/DIN 60332-1-2 [VDE 0482-332-1-2], IEC/TS/BS/EN 60332-3-24
Fire Test	IEC 60331, BS 6387 C, BS/BS/EN 50200 PH120 [more than 20 mm cable diameter BS/EN 50362 is applicable]
Smoke Density	TS/BS/IEC/EN 61034-1+2
Corrosive Gases Measurement	IEC 60754-2 , BS/EN 50267



JE-H(St)H...Bd FE180 E30-E90 PH120

Özellikler / Features

300/500 V Mika bant alev bariyerli çapraz bağlanan HFFR izoleli cam elyaf bantlı HFFR kılıflı yangın ortamında çalışabilen alüminyum ekranlı data kabloları

300/500 V Mica tape cross-linked HFFR fire barrier Insulation Alpet tape screen at data cables

Kablo Yapısı / Cable Structure

1. **İletken:** Solid bakır
 2. **Alev Bariyeri 1:** Mika bant
 3. **İzole:** Çapraz bağlı HFFR
 4. **Alev Bariyeri 2:** Cam elyaf bant
 5. **Ekran:** Alüminyum bant
 6. **Kılıf:** HFFR
1. **Conductor:** Solid copper
 2. **Fire Barrier 1:** Mica tape
 3. **Insulation:** Cross-linked HFFR
 4. **Fire Barrier 2:** Fiber glass tape
 5. **Screen:** Alpet tape
 6. **Sheath:** HFFR

Cable Design

Conductor	Solid bare copper [IEC/BS/EN 60228, VDE 0295]
1. Flame Barrier	Mica tape
Insulation	Cross Linked HFFR Compound BS/EN 50290-2, VDE 0207 HJ1, BS7655 EI5 [colors VDE 0815 Blue/Red ; Gray/Yellow ; Green/Brown ; White/Black] 4 pairs laid up to a bundle, bundles identified by spiral numbered or colored polyester tape, bundles laid up in layers. [Two pairs laid up as a star quad]
2. Flame Barrier	Fiber glass tape
Drain Wire	0.80 mm Solid tinned copper
Shielding	Aluminium laminated polyester tape
Outer Sheath	HFFR, Red [RAL 3000] or Orange [RAL 2004], BS/EN 50290-2, VDE 0207 HM2, BS 7655 LTS1 / LTS3

Technical Data

Min. Bending Radius	Fixed 8 x Cable Diameter, Flexing 15 x Cable Diameter
Conductor Resistance(max.)	0.50mm ² --39 ohm/km; 0.75mm ² --26 ohm/km; 1.00mm ² --19.5 ohm/km; 1.50mm ² --13.3 ohm/km; 2.50mm ² --7.98 ohm/km
Operating Voltage	300 V/500 V
Test Voltage [50 Hz]	2000 V
Insulation Resistance	>200 M.ohmxkm
Capacitance(800Hz)(max.)	Fixed -30 °C.....+90 °C Flexible -5 °C+60 °C
Capacitance Unbalance(max)(800Hz)	IEC/EN/BS/DIN 60332-1-2 [VDE 0482-332-1-2], IEC/TS/BS/EN 60332-3-24
Temperature Range	IEC 60331, BS 6387 C, BS/EN 50200 PH90
Flame test	TS/BS/IEC/EN 61034-1+2
Fire Test	IEC 60754-2 , BS/EN 50267
Smoke Density	TS/BS/IEC/EN 61034-1+2
Corrosive Gases Measurement	IEC 60754-2 , BS/EN 50267



Enstrümantasyon Kabloları

Instrumentation Cables

RE-Y[St]Y-fl

Özellikler / Features

300/500 V PVC izoleli Alpet bant ekranlı PVC kılıflı enstrümantasyon kabloları

300/500 V PVC insulation alpet tape screen at instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PVC
3. **Ekran:** Alüminyum bant
4. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Screen:** Alpet tape
4. **Sheath:** PVC

Cable Design

Conductor	Plain annealed copper wire, BS 6360, 0,50 mm ² and 0,75 mm ² flexible, or 1,5 mm ² stranded
Insulation	PVC compound, T11, BS 6746
Core identification	Up to 40 cores; yellow with black numbers and word printed [1-40], [10,TEN]; up to 80 cores; black with yellow numbers and word printed [1-40], [10,TEN]
Lay-up	Cores laid up in layers of optimum pitch
Separator	Polyester tape
Screen	AL-PES tape over tinned copper drain wire 0,50 mm ²
Outer sheath	PVC comp., flame retardant; TM1, BS 7655
Sheath colour	RAL 9005, Black

Rated voltage	300/500V
Standard	BS 5308 Part 2 Type 1
Insulation thickness	0,50mm ² : 0,60mm; 0,75mm ² : 0,60mm; 1,50mm ² : 0,60mm
Conductor class, BS 6360	0,50mm ² : Class 5; 0,75mm ² : Class 5; 1,5mm ² : Class 2
Conductor resistance	0,50mm ² : 39,0 ohm/km; 0,75mm ² : 26,0 ohm/km; 1,5mm ² : 12,1 ohm/km
Insulation resistance	Min. 25 Mohm.km
Mutual Capacitance	max. 250 pF/m
Capacitance unbalance	[1 kHz] : max. 450 pF/250 m
L / R (ratio) (max.)	0,50mm ² : 25 µH/ohm; 0,75mm ² : 25 µH/ohm; 1,5mm ² : 40 µH/ohm
Test voltage	Urms core-core : 1000 V, Urms core-screen : 1000 V
Temperature range	operation : - 40 oC ~ + 70 oC, installation : - 5 oC ~ + 50 oC
Min. bending radius	6 x D
Flame retardance test	IEC 60332-1 & BS EN 60332-1



RE-Y(St)Y-PIMF

Özellikler / Features

300/500 V PVC izoleli her çift Alpet bant ekranlı PVC kılıflı enstrümantasyon kabloları

300/500 V PVC insulation pair above alpet tape screen at instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PVC
3. **Çift Ekran:** Alüminyum bant
4. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Pair Screen:** Alpet tape
4. **Sheath:** PVC

Cable Design

Conductor	Plain annealed copper wire, BS 6360 0,50 mm ² and 0,75 mm ² flexible, or 1,5 mm ² stranded
Insulation	PVC compound, TI1, BS 6746
Core identification	White / blue ; with numbered tape under separator tape of the pair screen *Upon request ; Black / White cores numbered 1-1, 2-2,...
Pair	Two conductors twisted to a pair
PIMF Construction	Polyester tape above the pair, AL-PES tape over tinned copper drain wire, 0,50 mm ²
Lay-up	PIMF laid up in layers of optimum pitch
Separator	Polyester tape
Screen	AL-PES tape over tinned copper drain wire 0,50 mm ²
Outer sheath	PVC comp., flame retardant; TM1, BS 7655
Sheath colour	RAL 9005, Black

Rated voltage	300/500V
Standard	BS 5308 Part 1 Type 1
Insulation thickness	0,50mm ² : 0,60mm; 0,75mm ² : 0,60mm; 1,50mm ² : 0,60mm
Conductor class, BS 6360	0,50mm ² : Class 5; 0,75mm ² : Class 5; 1,5mm ² : Class 2
Conductor resistance	0,50mm ² : 39,7 ohm/km; 0,75mm ² : 26,5 ohm/km; 1,5mm ² : 12,3 ohm/km
Insulation resistance	Min. 25 Mohm.km
Mutual Capacitance	max. 250 pF/m
Capacitance unbalance	[1 kHz] : max. 450 pF/250 m
L / R [ratio] [max.]	0,50mm ² : 25 µH/ohm; 0,75mm ² : 25 µH/ohm; 1,5mm ² : 40 µH/ohm
Test voltage	Urms core-core : 1000 V, Urms core-screen : 1000 V
Temperature range	operation : - 40 oC ~ + 70 oC, installation : - 5 oC ~ + 50 oC
Min. bending radius	6 x D
Flame retardance test	IEC 60332-1 & BS EN 60332-1

RE-2Y(St)Y-fl

Özellikler / Features

300/500 V PE izoleli Alpet bant ekranlı PVC kılıflı enstrümantasyon kabloları

300/500 V PE insulation alpet tape screen at instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PE
3. **Ekran:** Alüminyum bant
4. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PE
3. **Screen:** Alpet tape
4. **Sheath:** PVC

Cable Design

Conductor	Plain annealed copper wire, BS 6360, 0,50 mm ² and 1,0 mm ² solid, 0,50 mm ² and 0,75 mm ² flexible or 1,5 mm ² stranded
Insulation	PE compound, BS 6234 Type03
Core identification	Black / White / Red cores are numbered [1-1-1, 2-2-2,...]
Pair	Two conductors twisted to a pair
Lay-up	Triples laid up in layers of optimum pitch
Separator	Polyester tape
Screen	AL-PES tape over tinned copper drain wire 0,50 mm ²
Outer sheath	PVC comp., flame retardant; TM1, BS 7655
Sheath colour	RAL 9005, Black or RAL 5015, Blue

Rated voltage	300/500V
Standard	Designed acc. to BS 5308 Part 1 Type 1
Insulation thickness	0,50mm ² : 0,50mm; 1,0mm ² : 0,60mm; 0,50mm ² : 0,60mm; 0,75mm ² : 0,60mm; 1,50mm ² : 0,60mm
Conductor class, BS 6360	0,50mm ² : Class 1; 1,0mm ² : Class 1; 0,50mm ² : Class 5; 0,75mm ² : Class 5; 1,5mm ² : Class 2
Conductor resistance	0,50mm ² : 36,8 ohm/km; 1,0mm ² : 18,4 ohm/km; 0,50mm ² : 39,7 ohm/km; 0,75mm ² : 26,5 ohm/km; 1,5mm ² : 12,3 ohm/km
Insulation resistance	Min. 5000 Mohm.km
Capacitance unbalance	[1 kHz] : max. 250 pF/250 m
L / R [ratio] [max.]	0,50mm ² : 25 µH/ohm; 0,75mm ² : 25 µH/ohm; 1,0mm ² : 25 µH/ohm; 1,5mm ² : 40 µH/ohm
Test voltage	Urms core-core : 1000 V, Urms core-screen : 1000 V
Temperature range	operation : - 40 oC ~ + 70 oC, installation : - 5 oC ~ + 50 oC
Min. bending radius	6 x D
Flame retardance test	IEC 60332-1 & BS EN 60332-1



RE-2Y(St)Y-PIMF

Özellikler / Features

300/500 V PE izoleli her çift Alpet bant ekranlı PVC kılıflı enstrümantasyon kabloları

300/500 V PE Insulation pair above alpet tape screen at instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PE
3. **Çift Ekran:** Alüminyum bant
4. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PE
3. **Pair Screen:** Alpet tape
4. **Sheath:** PVC

Cable Design

Conductor	Plain annealed copper wire, BS 6360; 0,50 mm ² and 1,0 mm ² solid, 0,50 mm ² flexible or 1,5 mm ² stranded
Insulation	PE compound, BS 6234 Type03
Core identification	Black / blue ; with numbered tape under separator tape of the pair screen *Upon request ; Black / White cores numbered 1-1, 2-2,...
Pair	Two conductors twisted to a pair
PIMF Construction	Polyester tape above the pair, AL-PES tape over tinned copper drain wire, 0,50 mm ²
Lay-up	Pairs laid up in layers of optimum pitch
Separator	Polyester tape
Screen	AL-PES tape over tinned copper drain wire 0,50 mm ²
Outer sheath	PVC comp., flame retardant; TM1, BS 7655
Sheath colour	RAL 9005, Black

Rated voltage	300/500V
Standard	BS 5308 Part 1 Type 1
Insulation thickness	0,50mm ² : 0,50mm; 1,0mm ² : 0,60mm; 0,50mm ² : 0,60mm; 1,50mm ² : 0,60mm
Conductor class, BS 6360	0,50mm ² : Class 1; 1,0mm ² : Class 1; 0,50mm ² : Class 5; 1,5mm ² : Class 2
Conductor resistance	0,50mm ² : 36,8 ohm/km; 1,0mm ² : 18,4 ohm/km; 0,50mm ² : 39,7 ohm/km; 1,5mm ² : 12,3 ohm/km
Insulation resistance	Min. 5000 Mohm.km
Mutual Capacitance	0,50 mm ² : max. 115 pF/m, 1,0 mm ² : max. 115 pF/m, 1,5 mm ² : max. 120 pF/m
Capacitance unbalance	[1 kHz] : max. 250 pF/250 m
L / R [ratio] [max.]	0,50mm ² : 25 µH/ohm; 1,0mm ² : 25 µH/ohm; 1,5mm ² : 40 µH/ohm
Test voltage	Urms core-core : 1000 V, Urms core-screen : 1000 V
Temperature range	operation : - 40 oC ~ + 70 oC, installation : - 5 oC ~ + 50 oC
Min. bending radius	6 x D
Flame retardance test	IEC 60332-1 & BS EN 60332-1



RE-2Y[St]H / RE-2X[St]H-MP

Özellikler / Features

300/500 V PE izoleli Alpet bant ekranlı HFFR kılıflı enstrümantasyon kabloları

300/500 V PE insulation alpet tape screen at instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PE
3. **Ekran:** Alüminyum bant
4. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** PE
3. **Screen:** Alpet tape
4. **Sheath:** HFFR

Cable Design

Conductor	Plain annealed copper wire, BS 6360, 0,50 mm ² and 1,0 mm ² solid, 0,50 mm ² flexible or 1,5 mm ² stranded
Insulation [2Y]	PE compound, BS 6234 Type03 [RE-2Y...]
Insulation [2X]	XLPE compound, GP8, BS 7655 [RE-2X...]
Core identification	According to BS 5308 Part 1 colour coded *Upon request ; Black / White cores numbered 1-1, 2-2,...
Pair	Pairs laid up in layers of optimum pitch
Lay-up	PIMF laid up in layers of optimum pitch
Separator	Polyester tape
Screen	AL-PES tape over tinned copper drain wire 0,50 mm ²
Outer sheath	LSZH compound, LST1, BS 7655; LSZH : Low Smoke Zero Halogen
Sheath colour	RAL 9005, Black or RAL 5015, Blue



RE-2Y[St]H / RE-2X[St]H-MP

Özellikler / Features

300/500 V XLPE izoleli her çift Alpet bant ekranlı HFFR kılıflı enstrümantasyon kabloları

300/500 V XLPE insulation pair above alpet tape screen at instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** XLPE
3. **Çift Ekran:** Alüminyum bant
4. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** XLPE
3. **Pair Screen:** Alpet tape
4. **Sheath:** HFFR

Technical Data

Rated voltage	300/500V
Standard	Designed acc. to BS 5308 Part 1 Type 1
Insulation thickness	0,50mm ² : 0,50mm; 1,0mm ² : 0,60mm; 0,50mm ² : 0,60mm; 0,75mm ² : 0,60mm; 1,50mm ² : 0,60mm
Conductor class, BS 6360	0,50mm ² : Class 1; 1,0mm ² : Class 1; 0,50mm ² : Class 5; 0,75mm ² : Class 5; 1,5mm ² : Class 2
Conductor resistance	0,50mm ² : 36,8 ohm/km; 1,0mm ² : 18,4 ohm/km; 0,50mm ² : 39,7 ohm/km; 0,75mm ² : 26,5 ohm/km; 1,5mm ² : 12,3 ohm/km
Insulation resistance	Min. 5000 Mohm.km
Mutual Capacitance	0,50 mm ² : max. 115 pF/m [≤ 2 pairs], max. 75 pF/m [all other pairs] 0,75 mm ² : max. 115 pF/m [≤ 2 pairs], max. 75 pF/m [all other pairs] 1,0 mm ² : max. 115 pF/m [≤ 2 pairs], max. 75 pF/m [all other pairs] 1,5 mm ² : max. 120 pF/m [≤ 2 pairs], max. 85 pF/m [all other pairs]
Capacitance unbalance	[1 kHz] : max. 250 pF/250 m
L / R [ratio] (max.)	0,50mm ² : 25 μ H/ohm; 0,75mm ² : 25 μ H/ohm; 1,0mm ² : 25 μ H/ohm; 1,5mm ² : 40 μ H/ohm
Test voltage	Urms core-core : 1000 V, Urms core-screen : 1000 V
Temperature range [2Y]	operation : - 40 oC ~ + 70 oC, installation : - 5 oC ~ + 50 oC
Temperature range [2X]	operation : - 40 oC ~ + 90 oC, installation : - 5 oC ~ + 50 oC
Min. bending radius	6 x D
Flame retardance test	IEC 60332-1 & BS EN 60332-1, IEC 60332-3 & BS EN 50266-2-4
Smoke density test	IEC 61034-2 & BS EN 61034-2
Halogen-free properties test	IEC60754-1/2 & BS EN 50267-2

RE-2Y[St]HSWAH / RE-2X[St]HSWAH

Özellikler / Features

300/500 V PE izoleli Alpet bant ekranlı zırlı HFFR kılıflı enstrümantasyon kabloları

300/500 V PE insulation alpet tape screen at armoring instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PE
3. **Ekran:** Alüminyum bant
4. **Armür:** Galvanizli yuvarlak çelik tel
5. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** PE
3. **Screen:** Alpet tape
4. **Armor:** Galvanized round steel wire
5. **Sheath:** HFFR

Cable Design

Conductor	Plain annealed copper wire, BS 6360, 0,50 mm ² and 1,0 mm ² solid, 0,50 mm ² and 0,75 mm ² flexible or 1,5 mm ² stranded
Insulation [2Y]	PE compound, BS 6234 Type03 [RE-2Y....]
Insulation [2X]	XLPE compound, GP8, BS 7655 [RE-2X....]
Core identification	Black / White / Red cores are numbered [1-1-1, 2-2-2,...] Note: Other core configurations manufactured upon request
Triple	Three conductors twisted to a triple
Lay-up	Triples laid up in layers of optimum pitch
Separator	Polyester tape
Screen	AL-PES tape over tinned copper drain wire 0,50 mm ²
Bedding	LSZH compound, Black
Armour	Galvanized round steel wire, BS EN 10257-1
Outer sheath	LSZH compound, LST1, BS 7655; LSZH : Low Smoke Zero Halogen
Sheath colour	RAL 9005, Black or RAL 5015, Blue



RE-2Y[St]HSWAH / RE-2X[St]HSWAH

Özellikler / Features

300/500 V XLPE izoleli Alpet bant ekranlı zırlı HFFR kılıflı enstrümantasyon kabloları

300/500 V XLPE insulation alpet tape screen at armoring instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** XLPE
3. **Ekran:** Alüminyum bant
4. **Armür:** Galvanizli yuvarlak çelik tel
5. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** XLPE
3. **Screen:** Alpet tape
4. **Armor:** Galvanized round steel wire
5. **Sheath:** HFFR

Technical Data

Rated voltage	300/500V
Standard	Designed acc. to BS 5308 Part 1 Type 2
Insulation thickness	0,50mm ² : 0,50mm; 1,0mm ² : 0,60mm; 0,50mm ² : 0,60mm; 0,75mm ² : 0,60mm; 1,50mm ² : 0,60mm
Conductor class, BS 6360	0,50mm ² : Class 1; 1,0mm ² : Class 1; 0,50mm ² : Class 5; 0,75mm ² : Class 5; 1,5mm ² : Class 2
Conductor resistance	0,50mm ² : 36,8 ohm/km; 1,0mm ² : 18,4 ohm/km; 0,50mm ² : 39,7 ohm/km; 0,75mm ² : 26,5 ohm/km; 1,5mm ² : 12,3 ohm/km
Insulation resistance	Min. 5000 Mohm.km
Mutual Capacitance	0,50 mm ² : max. 115 pF/m [≤ 2 pairs], max. 75 pF/m [all other pairs] 0,75 mm ² : max. 115 pF/m [≤ 2 pairs], max. 75 pF/m [all other pairs] 1,0 mm ² : max. 115 pF/m [≤ 2 pairs], max. 75 pF/m [all other pairs] 1,5 mm ² : max. 120 pF/m [≤ 2 pairs], max. 85 pF/m [all other pairs]
Capacitance unbalance	[1 kHz] : max. 250 pF/250 m
L / R [ratio] [max.]	0,50mm ² : 25 μ H/ohm; 0,75mm ² : 25 μ H/ohm; 1,0mm ² : 25 μ H/ohm; 1,5mm ² : 40 μ H/ohm
Test voltage	Urms core-core : 1000 V, Urms core-screen : 1000 V
Temperature range [2Y]	operation : - 40 oC ~ + 70 oC, installation : - 5 oC ~ + 50 oC
Temperature range [2X]	operation : - 40 oC ~ + 90 oC, installation : - 5 oC ~ + 50 oC
Min. bending radius	8 x D
Flame retardance test	IEC 60332-1 & BS EN 60332-1 IEC 60332-3 & BS EN 50266-2-4
Smoke density test	IEC 61034-2 & BS EN 61034-2
Halogen-free properties test	IEC60754-1/2 & BS EN 50267-2



RE-2Y[St]HSWAH-PIMF / RE-2X[St]HSWAH-PIMF

Özellikler / Features

300/500 V PE izoleli her çift Alpet bant ekranlı genel ekran Alpet bant ve zırlı HFFR kılıflı enstrümantasyon kabloları

300/500 V PE insulation pair screening with alpet and general screen with alpet tape screen at armoring instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PE
3. **Çift Ekran:** Alpet bant
4. **Ekran:** Alüminyum bant
5. **Armür:** Galvanizli yuvarlak çelik tel
6. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** PE
3. **Pair Screen:** Alpet tape
4. **Screen:** Alpet tape
5. **Armor:** Galvanized round steel wire
6. **Sheath:** HFFR

Cable Design

Conductor	Plain annealed copper wire, BS 6360. 0,50 mm ² and 1,0 mm ² solid, 0,50 mm ² and 0,75 mm ² flexible or 1,5 mm ² stranded
Insulation [2Y]	PE compound, BS 6234 Type03 [RE-2Y....]
Insulation [2X]	XLPE compound, GP8, BS 7655 [RE-2X....]
Core identification	Black / blue ; with numbered tape under separator tape of the pair screen *Upon request ; Black / White cores numbered 1-1, 2-2,...
Pair	Two conductors twisted to a pair
PIMF Construction	Polyester tape above the pair, AL-PES tape over tinned copper drain wire, 0,50 mm ²
Lay-up	PIMF laid up in layers of optimum pitch
Separator	Polyester tape
Screen	AL-PES tape over tinned copper drain wire 0,50 mm ²
Bedding	LSZH compound, Black
Armour	Galvanized round steel wire, BS EN 10257-1
Outer sheath	LSZH compound, LST1, BS 7655
Sheath colour	RAL 9005, Black or RAL 5015, Blue



RE-2Y[St]HSWAH-PIMF / RE-2X[St]HSWAH-PIMF

Özellikler / Features

300/500 V XLPE izoleli her çift Alpet bant ekranlı genel ekran Alpet bant ve zırlı HFFR kılıflı enstrümantasyon kabloları

300/500 V XLPE insulation pair screening with alpet and general screen with alpet tape screen at armoring instrumentation cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** XLPE
3. **Çift Ekran:** Alpet bant
4. **Ekran:** Alüminyum bant
5. **Armür:** Galvanizli yuvarlak çelik tel
6. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** XLPE
3. **Pair Screen:** Alpet tape
4. **Screen:** Alpet tape
5. **Armor:** Galvanized round steel wire
6. **Sheath:** HFFR

Technical Data

Rated voltage	300/500V
Standard	Designed acc. to BS 5308 Part 1 Type 1
Insulation thickness	0,50mm ² : 0,50mm; 1,0mm ² : 0,60mm; 0,50mm ² : 0,60mm; 0,75mm ² : 0,60mm; 1,50mm ² : 0,60mm
Conductor class, BS 6360	0,50mm ² : Class 1; 1,0mm ² : Class 1; 0,50mm ² : Class 5; 0,75mm ² : Class 5; 1,5mm ² : Class 2
Conductor resistance	0,50mm ² : 36,8 ohm/km; 1,0mm ² : 18,4 ohm/km; 0,50mm ² : 39,7 ohm/km; 0,75mm ² : 26,5 ohm/km; 1,5mm ² : 12,3 ohm/km
Insulation resistance	Min. 5000 Mohm.km
Mutual Capacitance	0,50 mm ² : max. 115 pF/m; 0,75 mm ² : max. 115 pF/m 1,0 mm ² : max. 115 pF/m; 1,5 mm ² : max. 120 pF/m
Capacitance unbalance	[1 kHz] : max. 250 pF/250 m
L / R [ratio] [max.]	0,50mm ² : 25 µH/ohm; 0,75mm ² : 25 µH/ohm; 1,0mm ² : 25 µH/ohm; 1,5mm ² : 40 µH/ohm
Test voltage	Urms core-core : 1000 V, Urms core-screen : 1000 V
Temperature range [2Y]	operation : - 40 oC ~ + 70 oC, installation : - 5 oC ~ + 50 oC
Temperature range [2X]	operation : - 40 oC ~ + 90 oC, installation : - 5 oC ~ + 50 oC
Min. bending radius	8 x D
Flame retardance test	IEC 60332-1 & BS EN 60332-1 IEC 60332-3 & BS EN 50266-2-4
Smoke density test	IEC 61034-2 & BS EN 61034-2
Halogen-free properties test	IEC60754-1/2 & BS EN 50267-2



RE-2Y(St)Y-fl-MP

Özellikler / Features

300/500 V PE izoleli Alpet bant ekranlı PVC kılıflı enstrümantasyon kabloları

300/500 V PE insulation alpet tape screen at instrumentation cables

Kablo Yapısı / Cable Structure

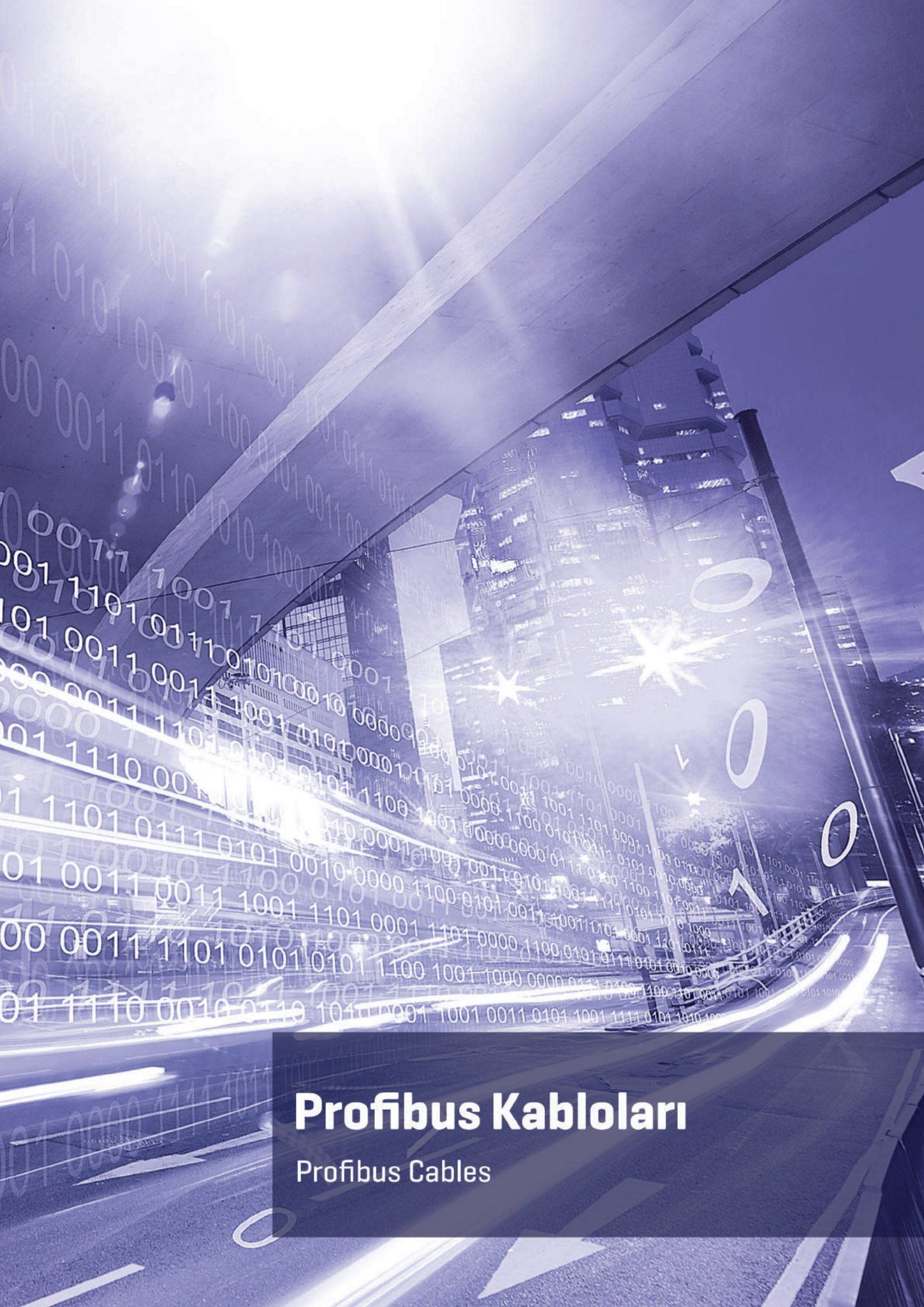
1. **İletken:** Çok telli bakır
2. **İzole:** PE
3. **Ekran:** Alüminyum bant
4. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PE
3. **Screen:** Alpet tape
4. **Sheath:** PVC

Cable Design

Conductor	Plain annealed copper wire, BS 6360, 0,50 mm ² and 1,0 mm ² solid, 0,50 mm ² flexible or 1,5 mm ² stranded
Insulation	PE compound, BS 6234 Type03
Core identification	According to BS 5308 Part 1 colour coded *Upon request ; Black / White cores numbered 1-1, 2-2,...
Pair	Two conductors twisted to a pair
Lay-up	Pairs laid up in layers of optimum pitch
Separator	Polyester tape
Screen	AL-PES tape over tinned copper drain wire 0,50 mm ²
Outer sheath	PVC comp., flame retardant; TM1, BS 7655
Sheath colour	RAL 9005, Black

Rated voltage	300/500V
Standard	BS 5308 Part 1 Type 1
Insulation thickness	0,50mm ² : 0,50mm; 1,0mm ² : 0,60mm; 0,50mm ² : 0,60mm; 1,50mm ² : 0,60mm
Conductor class, BS 6360	0,50mm ² : Class 1; 1,0mm ² : Class 1; 0,50mm ² : Class 5; 1,5mm ² : Class 2
Conductor resistance	0,50mm ² : 36,8 ohm/km; 1,0mm ² : 18,4 ohm/km; 0,50mm ² : 39,7 ohm/km; 1,5mm ² : 12,3 ohm/km
Insulation resistance	Min. 5000 Mohm.km
Mutual Capacitance	0,50 mm ² : max. 115 pF/m [\leq 2 pairs],max. 75 pF/m [all other pairs] 1,0 mm ² : max. 115 pF/m [\leq 2 pairs],max. 75 pF/m [all other pairs] 1,5 mm ² : max. 120 pF/m [\leq 2 pairs],max. 85 pF/m [all other pairs]
Capacitance unbalance	[1 kHz] : max. 250 pF/250 m
L / R [ratio] [max.]	0,50mm ² : 25 μ H/ohm; 1,0mm ² : 25 μ H/ohm; 1,5mm ² : 40 μ H/ohm
Test voltage	Urms core-core : 1000 V, Urms core-screen : 1000 V
Temperature range	operation : - 40 oC ~ + 70 oC, installation : - 5 oC ~ + 50 oC
Min. bending radius	6 x D
Flame retardance test	IEC 60332-1 & BS EN 60332-1



Profibus Kabloları

Profibus Cables



PROFIBUS PA

Özellikler / Features

Foam-skin PE izoleli PVC kılıflı profibus kabloları
Foam-skin PE insulation PVC sheathing profibus cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
 2. **İzole:** Foam-skin PE
 3. **Ekran 1:** Alüminyum bant
 4. **Ekran 2:** Kalaylı bakır örgü
 5. **Kılıf:** PVC
-
1. **Conductor:** Flexible copper
 2. **Insulation:** Foam-skin PE
 3. **Screen 1:** Alpet tape
 4. **Screen 2:** Tinned copper braid
 5. **Sheath:** PVC

Cable Design

Conductor	1.0 mm ² Stranded electrolytic annealed copper [IEC/BS/EN 60228, VDE 0295 Class 2]
Insulation	Foam-skin polyethylene Red/Green [BS/EN 50290-2]
Lay-up	As pairs and each pair as layers.
Separator	Polyester Tape
1. Screen	Al-Pes foil
2. Screen	Tinned copper wire braiding 65 % cov. Rate
Outer Sheath	PVC Blue [RAL 5015] or Black [BS/EN 50290-2]
Reference Standards	DIN 19245T3, EN 50170, IEC 61158
Flame Test	IEC/EN/BS/DIN 60332-1-2 [VDE 0482-332-1-2]

Min. Bending Radius	Fixed 10 x Cable Diameter
Impedance [3-20 MHz]	100±10 ohm
Loop Resistance [Max. ohm/km]	36.2 ohm/km
Capacitance[max.]	54 pF/m
Insulation Resistance	>5000M ohmxkm
Test Voltage [50 Hz]	1500 V
Max. Operating Voltage	250 V
Temperature Range	Fixed -30 °C.....+70 °C
Attenuations [max. dB/100 m]	39 kHz....3 dB/100m



PROFIBUS CAN

Özellikler / Features

Foam-skin PE izoleli PVC kılıflı profibus kabloları
Foam-skin PE insulation PVC sheathing profibus cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
 2. **İzole:** Foam-skin PE
 3. **Ekran:** Kalaylı bakır örgü
 4. **Kılıf:** PVC
-
1. **Conductor:** Flexible copper
 2. **Insulation:** Foam-skin PE
 3. **Screen 2:** Tinned copper braid
 4. **Sheath:** PVC

Cable Design

Conductor	0.22 mm ² Stranded electrolytic annealed copper (AWG 24) 0.50 mm ² Stranded electrolytic annealed copper (VDE 0295 Class 6)
Insulation	Foam-skin polyethylene Color:DIN 47100 [BS/EN 50290-2]
Lay-up	2 cores are stranded together with the fillers.
Separator	Polyester Tape
Screen	Tinned copper wire braiding 85 % cov. Rate
Outer Sheath	PVC Purple [RAL 4001] [BS/EN 50290-2]
Reference Standards	DIN 19245T3, EN 50170, ISO11898
Flame Test	IEC/EN/BS/DIN 60332-1-2 [VDE 0482-332-1-2]

Min. Bending Radius	Fixed 10 x Cable Diameter Flexible 15 x Cable Diameter
Impedance [3-20 MHz]	110±10 ohm
Loop Resistance [Max. ohm/km]	0.22 mm ² : 190 ohm/km 0.50 mm ² : 78 ohm/km
Capacitance[max.]	50 pF/m
Insulation Resistance	>5000M ohmxkm
Test Voltage [50 Hz]	1500 V
Max. Operating Voltage	250 V
Temperature Range	Fixed -30 °C.....+70 °C



PROFIBUS L2

Özellikler / Features

Foam-skin PE izoleli PVC kılıflı profibus kabloları

Foam-skin PE insulation PVC sheathing profibus cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** Foam-skin PE
3. **Ekran 1:** Alüminyum bant
4. **Ekran 2:** Kalaylı bakır örgü
5. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** Foam-skin PE
3. **Screen 1:** Alpet tape
4. **Screen 2:** Tinned copper braid
5. **Sheat:** PVC

Cable Design

Conductor	1x2x0.64 mm Electrolytic annealed solid copper [AWG 22]
Insulation	Foam-skin polyethylene Red/Green [BS/EN 50290-2]
Lay-up	2 cores are stranded together with the fillers.
Separator	Polyester Tape
1. Screen	AL-PES-AL foil
2. Screen	Tinned copper wire braiding 65 % cov. Rate
Outer Sheath	8.00 mm PVC Purple [RAL 4001] or Gray [RAL 7001] [BS/EN 50290-2]
Copper Weight	18 kg/km
Cable Weight[approx.]	65 kg/km
Reference Standards	DIN 19245T3, EN 50170, IEC 61158
Flame Test	IEC/EN/BS/DIN 60332-1-2 [VDE 0482-332-1-2]

Min. Bending Radius	Fixed 10 x Cable Diameter
Impedance [3-20 MHz]	150±15 ohm
Loop Resistance [Max. ohm/km]	110 ohm/km
Capacitance[max.]	30 pF/m
Insulation Resistance	>5000M ohmxkm
Test Voltage [50 Hz]	1500 V
Max. Operating Voltage	250 V
Temperature Range	Fixed -30 °C.....+70 °C
Attenuations [max. dB/100 m]	38.4 kHz....0.4dB/100m



PROFIBUS L2 OUTDOOR

Özellikler / Features

Foam-skin PE izoleli PE kılıflı profibus kabloları
Foam-skin PE insulation PE sheathing profibus cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
 2. **İzole:** Foam-skin PE
 3. **Ekran:** Kalaylı bakır örgü
 4. **Kılıf:** PE
1. **Conductor:** Flexible copper
 2. **Insulation:** Foam-skin PE
 3. **Screen 2:** Tinned copper braid
 4. **Sheat:** PE

Cable Design

Conductor	1x2x0.64 mm Electrolytic annealed solid copper [AWG 22]
Insulation	Foam-skin polyethylene Red/Green [BS/EN 50290-2]
Lay-up	2 cores are stranded together with the fillers.
Separator	Polyester Tape
1.Screen	AL-PES-AL foil
2. Screen	Tinned copper wire braiding 65 % cov. Rate
Outer Sheath	8.00 mm Polyethylene Black [EN 50290-2-24]
Copper Weight	18 kg/km
Cable Weight[approx.]	50 kg/km
Reference Standards	DIN 19245T3, EN 50170, IEC 61158

Min. Bending Radius	Fixed 10 x Cable Diameter
Impedance [3-20 MHz]	150±15 ohm
Loop Resistance [Max. ohm/km]	110 ohm/km
Capacitance[max.]	30 pF/m
Insulation Resistance	>5000M ohmxkm
Test Voltage [50 Hz]	1500 V
Max. Operating Voltage	250 V
Temperature Range	Fixed -30 °C.....+70 °C
Attenuations [max. dB/100 m]	38.4 kHz....0.4dB/100m



PROFIBUS PA-PIMF / SWB

Özellikler / Features

Foam-skin PE izoleli PVC kılıflı çelik tel örgü zırlı profibus kabloları

Foam-skin PE insulation steel wire braid armor PVC sheating profibus cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** Foam-skin PE
3. **Ekran 1:** Alüminyum bant
4. **Ekran 2:** Kalaylı bakır örgü
5. **Dolgu:** PVC
6. **Zırh:** Çelik tel örgü
7. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** Foam-skin PE
3. **Screen 1:** Alpet tape
4. **Screen 2:** Tinned copper braid
5. **Filler:** PVC
6. **Armor:** Steel wire braid
7. **Sheat:** PVC

Cable Design

Conductor	1.0 mm ² Stranded electrolytic annealed copper [IEC/BS/EN 60228, VDE 0295 Class 2]
Insulation	Foam-skin polyethylene Red/Green [BS/EN 50290-2]
Lay-up	Each shielded pairs as layers.
Separator	Polyester Tape
Overall shielding	Al-Pes foil+Tinned copper drain wire
Individual Shielding	Al-Pes foil+Tinned copper drain wire
Inner Sheath	PVC
Armour	Galvanized steel wire braiding (Min. Diameter 0.30 mm, Coverage Rate 75%)
Outer Sheath	PVC Blue [RAL 5015] or Black [BS/EN 50290-2]
Reference Standards	DIN 19245T3, EN 50170, IEC 61158
Flame Test	IEC/EN/BS/DIN 60332-1-2 [VDE 0482-332-1-2]

Min. Bending Radius	Fixed 10 x Cable Diameter
Impedance [3-20 MHz]	100±10 ohm
Loop Resistance [Max. ohm/km]	36.2 ohm/km
Capacitance(max.)	54 pF/m
Insulation Resistance	>5000M ohmxkm
Test Voltage [50 Hz]	1500 V
Max. Operating Voltage	250 V
Temperature Range	Fixed -30 °C.....+70 °C



Veri İletim Kabloları

Data Cables

LIYY

Özellikler / Features

300/500 V Pvc izoleli sinyal kontrol kabloları
450/750 V Pvc insulation signal control cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
 2. **İzole:** PVC
 3. **Kılıf:** PVC
1. **Conductor:** Stranded copper
 2. **Insulation:** PVC
 3. **Sheath:** PVC

Technical Data

Nominal Kesit	Yalıtkan Et Kalınlığı [En Az]	Damar Çapı [En Çok]	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Gerilim Dayanımı Vaa	Çalışma Gerilimi
Nominal Cross-section	Min. Insulation Thickness	Maximum Insulated Conductor Dia.	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Test Voltage Vaa	Operating Voltage
mm ²	mm	mm	ohm/km	m.ohm/km	1dk [1min]	V
300/500 V						
0,22	0,3	1,3	96	200	1200	500
0,25 [14x0,15 mm]	0,3	1,4	79,9	200	1200	500
0,34	0,3	1,5	53	200	1200	500
0,50 [16x0,20 mm]	0,4	1,95	38,9	200	1200	500
0,75 [24x0,20 mm]	0,4	2,15	26	200	1200	500
1,00 [32x0,20 mm]	0,4	2,25	19,5	200	1200	500
1,50 [30x0,25 mm]	0,5	2,75	13,3	200	2500	900
2,5	0,5	3,2	7,98	200	2500	900



LIYCY

Özellikler / Features

300/500 V Pvc izoleli bakır örgü ekranlı sinyal kontrol kabloları

450/750 V Pvc insulation copper screen signal control cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
2. **İzole:** PVC
3. **Bant:** Pes bant
4. **Ekran:** Kalaylı bakır örgü
5. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Wrapping:** Pes Tape
4. **Screen:** Tinned copper braid
5. **Sheath:** PVC

Technical Data

Nominal Kesit	Yalıtkan Et Kalınlığı [En Az]	Damar Çapı [En Çok]	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Gerilim Dayanımı Vaa	Çalışma Gerilimi
Nominal Cross-section	Min. Insulation Thickness	Maximum Insulated Conductor Dia.	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Test Voltage Vaa	Operating Voltage
mm ²	mm	mm	ohm/km	m.ohm/km	1dk [1min]	V
300/500 V						
0,22	0,3	1,3	96	200	1200	500
0,25 [14x0,15 mm]	0,3	1,4	79,9	200	1200	500
0,34	0,3	1,5	53	200	1200	500
0,50 [16x0,20 mm]	0,4	1,95	38,9	200	1200	500
0,75 [24x0,20 mm]	0,4	2,15	26	200	1200	500
1,00 [32x0,20 mm]	0,4	2,25	19,5	200	1200	500
1,50 [30x0,25 mm]	0,5	2,75	13,3	200	2500	900
2,5	0,5	3,2	7,98	200	2500	900

LIY[St]Y

Özellikler / Features

300/300 V PVC izoleli sanayi tip data kabloları

300/300 V PVC insulation data cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
2. **İzole:** PVC
3. **Bant:** Pes Bant
4. **Toprak Teli:** Kalaylı çok telli som bakır
5. **Ekran:** Alüminyum lamineli polyester bant
6. **Kılıf:** FR PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Wrapping:** Pes Tape
4. **Drain wire:** Tinned copper
5. **Screen:** Alpes Tape
6. **Sheath:** FR PVC

Technical Data

Nominal Kesit	Yalıtkan Et Kalınlığı [En Az]	Damar Çapı [En Çok]	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Gerilim Dayanımı Vaa	Çalışma Gerilimi
Nominal Cross-section	Min. Insulation Thickness	Maximum Insulated Conductor Dia.	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Test Voltage Vaa	Operating Voltage
mm ²	mm	mm	ohm/km	m.ohm/km	1dk [1min]	V
						300/500 V
0,22	0,3	1,3	96	200	1200	500
0,25 [14x0,15 mm]	0,3	1,4	79,9	200	1200	500
0,34	0,3	1,5	53	200	1200	500
0,50 [16x0,20 mm]	0,4	1,95	38,9	200	1200	500
0,75 [24x0,20 mm]	0,4	2,15	26	200	1200	500
1,00 [32x0,20 mm]	0,4	2,25	19,5	200	1200	500
1,50 [30x0,25 mm]	0,5	2,75	13,3	200	2500	900
2,5	0,5	3,2	7,98	200	2500	900



LIH[St]H

Özellikler / Features

300/300 V PVC izoleli sanayi tip data kabloları

300/300 V PVC insulation data cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
2. **İzole:** PVC
3. **Bant:** Pes Bant
4. **Toprak Teli:** Kalaylı çok telli som bakır
5. **Ekran:** Alüminyum lamineli polyester bant
6. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Wrapping:** Pes Tape
4. **Drain wire:** Tinned copper
5. **Screen:** Alpes Tape
6. **Sheath:** HFFR

Technical Data

Nominal Kesit	Yalıtkan Et Kalınlığı [En Az]	Damar Çapı [En Çok]	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Gerilim Dayanımı Vaa	Çalışma Gerilimi
Nominal Cross-section	Min. Insulation Thickness	Maximum Insulated Conductor Dia.	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Test Voltage Vaa	Operating Voltage
mm ²	mm	mm	ohm/km	m.ohm/km	1dk [1min]	V
						300/500 V
0,22	0,3	1,3	96	200	1200	500
0,25 [14x0,15 mm]	0,3	1,4	79,9	200	1200	500
0,34	0,3	1,5	53	200	1200	500
0,50 [16x0,20 mm]	0,4	1,95	38,9	200	1200	500
0,75 [24x0,20 mm]	0,4	2,15	26	200	1200	500
1,00 [32x0,20 mm]	0,4	2,25	19,5	200	1200	500
1,50 [30x0,25 mm]	0,5	2,75	13,3	200	2500	900
2,5	0,5	3,2	7,98	200	2500	900

LIHH

Özellikler / Features

300/500 V HFFR izoleli sinyal kontrol kabloları
450/750 V HFFR insulation signal control cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
 2. **İzole:** HFFR
 3. **Kılıf:** HFFR
1. **Conductor:** Stranded copper
 2. **Insulation:** HFFR
 3. **Sheath:** HFFR

Technical Data

Nominal Kesit	Yalıtkan Et Kalınlığı [En Az]	Damar Çapı [En Çok]	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Gerilim Dayanımı Vaa	Çalışma Gerilimi
Nominal Cross-section	Min. Insulation Thickness	Maximum Insulated Conductor Dia.	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Test Voltage Vaa	Operating Voltage
mm ²	mm	mm	ohm/km	m.ohm/km	1dk [1min]	V
0,22	0,3	1,3	96	200	1200	500
0,25 [14x0,15 mm]	0,3	1,4	79,9	200	1200	500
0,34	0,3	1,5	53	200	1200	500
0,50 [16x0,20 mm]	0,4	1,95	38,9	200	1200	500
0,75 [24x0,20 mm]	0,4	2,15	26	200	1200	500
1,00 [32x0,20 mm]	0,4	2,25	19,5	200	1200	500
1,50 [30x0,25 mm]	0,5	2,75	13,3	200	2500	900
2,5	0,5	3,2	7,98	200	2500	900

300/500 V



LIHCH

Özellikler / Features

300/500 V HFFR izoleli bakır örgü ekranlı sinyal kontrol kabloları

450/750 V HFFR insulation copper screen signal control cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
2. **İzole:** HFFR
3. **Bant:** Pes bant
4. **Ekran:** Kalaylı bakır örgü
5. **Kılıf:** HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** HFFR
3. **Wrapping:** Pes Tape
4. **Screen:** Tinned copper braid
5. **Sheath:** HFFR

Technical Data

Nominal Kesit	Yalıtkan Et Kalınlığı [En Az]	Damar Çapı [En Çok]	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Gerilim Dayanımı Vaa	Çalışma Gerilimi
Nominal Cross-section	Min. Insulation Thickness	Maximum Insulated Conductor Dia.	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Test Voltage Vaa	Operating Voltage
mm ²	mm	mm	ohm/km	m.ohm/km	1dk [1min]	V
0,22	0,3	1,3	96	200	1200	500
0,25 [14x0,15 mm]	0,3	1,4	79,9	200	1200	500
0,34	0,3	1,5	53	200	1200	500
0,50 [16x0,20 mm]	0,4	1,95	38,9	200	1200	500
0,75 [24x0,20 mm]	0,4	2,15	26	200	1200	500
1,00 [32x0,20 mm]	0,4	2,25	19,5	200	1200	500
1,50 [30x0,25 mm]	0,5	2,75	13,3	200	2500	900
2,5	0,5	3,2	7,98	200	2500	900

300/500 V

JYY

Özellikler / Features

300/300 V Pvc izoleli haberleşme kabloları
300/300 V Pvc insulation telecommunication cables

Kablo Yapısı / Cable Structure

1. **İletken:** Tek telli som bakır
2. **İzole:** PVC
3. **Ekran:** Pes Bant
4. **Kılıf:** FR PVC

1. **Conductor:** Rigit copper
2. **Insulation:** PVC
3. **Screen:** Pes Tape
4. **Sheath:** FR PVC

Technical Data

Nominal Kesit	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Kapasite Dengesizliği Maksimum	Kapasite (En Çok)	Gerilim Dayanımı		Çalışma Gerilimi
					ilt/ilt	ilt/ekr	
Nominal Cross-section	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Maximum unbalance Capacitance	Maximum Capacitance	Test Voltage		Operating Voltage
mm ²	ohm/km	ohm/km	pF/100m at 800Hz	[nF/Km]	1dk [1min], Va.c.		Vdc
0,8	0,3	100	300	100	800		300
1,00	0,3	100	300	100	800		300
1,50	0,3	100	300	100	800		300



JHH

Özellikler / Features

300/300 V PVC izoleli bitişik hoparlör kabloları

300/300 V PVC insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Tek telli som bakır
2. **İzole:** HFFR
3. **Bant:** Pes Bant
4. **Kılıf:** HFFR

1. **Conductor:** Rigit copper
2. **Insulation:** HFFR
3. **Wrapping:** Pes Tape
4. **Sheath:** HFFR

Technical Data

Nominal Kesit	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Kapasite Dengesizliği Maksimum	Kapasite (En Çok)	Gerilim Dayanımı		Çalışma Gerilimi
					ilt/ilt	ilt/ekr	
Nominal Cross-section	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Maximum unbalance Capacitance	Maximum Capacitance	Test Voltage		Operating Voltage
mm ²	ohm/km	ohm/km	pF/100m at 800Hz	[nF/Km]	1dk [1min], Va.c.		Vdc
0,8	0,3	100	300	100	800		300
1,00	0,3	100	300	100	800		300
1,50	0,3	100	300	100	800		300

JY[st]Y

Özellikler / Features

300/300 V Pvc izoleli haberleşme kabloları
300/300 V Pvc insulation telecommunication cables

Kablo Yapısı / Cable Structure

1. **İletken:** Tek telli som bakır
 2. **İzole:** PVC
 3. **Bant:** Pes Bant
 4. **Toprak Teli:** Kalaylı tek telli som bakır
 5. **Ekran:** Alüminyum lamineli polyester bant
 6. **Kılıf:** FR PVC
1. **Conductor:** Rigit copper
 2. **Insulation:** PVC
 3. **Wrapping:** Pes Tape
 4. **Drain wire:** Tinned copper
 5. **Screen:** Alpes Tape
 6. **Sheath:** FR PVC

Technical Data

Nominal Kesit	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Kapasite Dengesizliği Maksimum	Kapasite (En Çok)	Gerilim Dayanımı		Çalışma Gerilimi
					ilt/ilt	ilt/ekr	
Nominal Cross-section	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Maximum unbalance Capacitance	Maximum Capacitance	Test Voltage		Operating Voltage
mm ²	ohm/km	ohm/km	pF/100m at 800Hz	[nF/Km]	1dk [1min], Va.c.		Vdc
0,8	0,3	100	300	100	800		300
1,00	0,3	100	300	100	800		300
1,50	0,3	100	300	100	800		300



JH[st]H

Özellikler / Features

300/300 V PVC izoleli bitişik hoparlör kabloları

300/300 V PVC insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Tek telli som bakır
2. **İzole:** HFFR
3. **Bant:** Pes Bant
4. **Toprak Teli:** Kalaylı tek telli som bakır
5. **Ekran:** Alüminyum lamineli polyester bant
6. **Kılıf:** HFFR

1. **Conductor:** Rigit copper
2. **Insulation:** HFFR
3. **Wrapping:** Pes Tape
4. **Drain wire:** Tinned copper
5. **Screen:** Alpes Tape
6. **Sheath:** HFFR

Technical Data

Nominal Kesit	20 °C'de Mks. İletken DC Direnci	20 °C'de Min. İletken DC Direnci	Kapasite Dengesizliği Maksimum	Kapasite (En Çok)	Gerilim Dayanımı		Çalışma Gerilimi
					ilt/ilt	ilt/ekr	
Nominal Cross-section	Max. Conductor Resistance at 20°C	Min. Insulation Resistance at 20 °C	Maximum unbalance Capacitance	Maximum Capacitance	Test Voltage		Operating Voltage
mm ²	ohm/km	ohm/km	pF/100m at 800Hz	[nF/Km]	1dk [1min], Va.c.		Vdc
0,8	0,3	100	300	100	800		300
1,00	0,3	100	300	100	800		300
1,50	0,3	100	300	100	800		300

CAT 6e-UTP

Özellikler / Features

250 Mhz 100 Ohm Pe izoleli data kabloları

250 Mhz 100 Ohm Pe insulation data cable

Kablo Yapısı / Cable Structure

1. **İletken:** Tek telli som bakır
2. **İzole:** PE
3. **Ayırıcı:** PE Yıldız
4. **Kılıf:** PVC

1. **Conductor:** Rigit copper
2. **Insulation:** PE
3. **Separator:** PE Star
4. **Sheath:** PVC

Electrical Properties

DC loop resistance	< 176 ohm/km
Resistance unbalance	< 2 %
Insulation resistance (500 V)	> 5000 Mohm *km
Capacitance at 800 Hz	Nom. 48 nF/km
Capacitance unbalance (pair to ground)	< 1500 pF/km
Mean impedance 100 MHz	100 ± 5 ohm
Nominal velocity of propagation	Approx. 67 %
Propagation delay	Nominal 535 ns/100m
Delay skew	Nominal 20 ns/100m
Test voltage (DC, 1 min) Core/Core	1000 V

Electrical data (nominal)

F	Attenuation		Next		Ps-Next		Acr		Ps-Acr		Elfext		Ps-Elfext		Return Loss
[MHZ]	[dB/100m]		[dB]		[dB]		[dB/100m]		[dB/100m]		[dB/100m]		[dB/100m]		[dB]
	max.	nom.	min.	nom.	min.	nom.	min.	nom.	min.	nom.	max.	nom.	max.	nom.	min.
Cat 6															300/500 V
1	2.1	1,9	74	78	72	75	72.0	76.1	70.0	73.1	56	82	65	80	20
4	3,8	3,8	65	69	63	66	61.2	65.2	59.2	62.2	63	70	53	68	23
10	6,0	6,0	59	63	57	60	53.0	57.0	51.0	54.0	48	62	45	60	25
16	7,6	7,6	56	60	54	57	48.4	52.3	46.4	49.3	44	58	41	56	25
20	8,5	8,5	55	59	53	56	46.5	50.0	44.5	47.0	42	56	39	54	25
31.2	10,7	10,7	52	56	50	53	41.3	45.0	39.3	42.0	38	52	35	50	23,6



HF-CAT 6e-UTP

Özellikler / Features

250 Mhz 100 Ohm Pe izoleli data kabloları
250 Mhz 100 Ohm Pe insulation data cable

Kablo Yapısı / Cable Structure

1. **İletken:** Tek telli som bakır
 2. **İzole:** PE
 3. **Ayırıcı:** PE Yıldız
 4. **Kılıf:** HFFR
1. **Conductor:** Rigit copper
 2. **Insulation:** PE
 3. **Separator:** PE Star
 4. **Sheath:** HFFR

Electrical Properties

DC loop resistance	< 176 ohm/km
Resistance unbalance	< 2 %
Insulation resistance (500 V)	> 5000 Mohm *km
Capacitance at 800 Hz	Nom. 48 nF/km
Capacitance unbalance (pair to ground)	< 1500 pF/km
Mean impedance 100 MHz	100 ± 5 ohm
Nominal velocity of propagation	Approx. 67 %
Propagation delay	Nominal 535 ns/100m
Delay skew	Nominal 20 ns/100m
Test voltage (DC, 1 min) Core/Core	1000 V

Electrical data (nominal)

F	Attenuation	Next	Ps-Next	Acr	Ps-Acr	Elfext	Ps-Elfext	Return Loss
[MHZ]	[dB/100m] max. nom.	[dB] min. nom.	[dB] min. nom.	[dB/100m] min. nom.	[dB/100m] min. nom.	[dB/100m] max. nom.	[dB/100m] max. nom.	[dB] min.
Cat 6								
300/500 V								
1	2.1 1,9	74 78	72 75	72.0 76.1	70.0 73.1	56 82	65 80	20
4	3,8 3,8	65 69	63 66	61.2 65.2	59.2 62.2	63 70	53 68	23
10	6,0 6,0	59 63	57 60	53.0 57.0	51.0 54.0	48 62	45 60	25
16	7,6 7,6	56 60	54 57	48.4 52.3	46.4 49.3	44 58	41 56	25
20	8,5 8,5	55 59	53 56	46.5 50.0	44.5 47.0	42 56	39 54	25
31.2	10,7 10,7	52 56	50 53	41.3 45.0	39.3 42.0	38 52	35 50	23,6

LI2Y(st)Y

Özellikler / Features

300/300 V PE izoleli sanayi tip data kabloları

300/300 V PE insulation data cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
2. **İzole:** PE
3. **Bant:** Pes Bant
4. **Toprak Teli:** Kalaylı çok telli som bakır
5. **Ekran:** Alüminyum lamineli polyester bant
6. **Kılıf:** FR PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PE
3. **Wrapping:** Pes Tape
4. **Drain wire:** Tinned copper
5. **Screen:** Alpes Tape
6. **Sheath:** FR PVC

Technical Data

Standart	VDE 0812 & VDE 0814 & VDE 0245
izolasyon direnci	Min. 5000 M Ω .km
Efektif kapasite (800 Hz)	d/d-c/c \geq 0,25 mm ² : max. 90 pF/m
Endüktans / Empedans	~ 0,4 Mh/km / ~ 85 ohm
Çalışma gerilimi	U ₀ /U \geq 0,50 mm ² : 300/500V
Test gerilimi (AC 50 Hz)	> 0,50 mm ² : 2000 V
Çalışma sıcaklığı	Sabit: - 30 °C ~ + 80 °C Esnek: - 5 °C ~ + 70 °C
Min. bükülme yarıçapı	Sabit: 6 x D Esnek: 15 x D
Alev geciktirici test	IEC 60332-1 & EN 50265-2-1



Kumanda Kontrol Kabloları

Control Cables

HSLH

Özellikler / Features

300/500 V HFFR izoleli kablolar
300/500 V HFFR insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
 2. **İzole:** HFFR
 3. **Kılıf:** Yağlara dayanıklı HFFR
1. **Conductor:** Flexible copper
 2. **Insulation:** HFFR
 3. **Sheath:** Oil resistant HFFR

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	HFFR compound , T12
Flame Barrier	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of optimum pitch
Outer sheath	PVC compound, TM2
Sheath colour	RAL 7001,Grey

Technical Data

Min. Bending Radius	TS HD 21.13 S1, DIN VDE 0281-13 VDE 0245-102 [Designed according to]
Conductor Resistance(max.)	Min. 20 M Ω .km
Operating Voltage	300 V/500 V
Test Voltage [50 Hz]	2000 V
Insulation Resistance	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Temperature Range	Fixed: 4 x D; Mobile: 12,5 x D
Flame test	IEC 60332-1 & EN 50265-2-1



HSLHCH

Özellikler / Features

300/500 V HFFR izoleli kablolar
300/500 V HFFR insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
 2. **İzole:** HFFR
 3. **Dolgu:** HFFR
 4. **Ekran:** Kalaylı Bakır
 5. **Kılıf:** Yağlara dayanıklı HFFR
1. **Conductor:** Flexible copper
 2. **Insulation:** HFFR
 3. **Filler:** HFFR
 4. **Screen:** Tinned copper
 5. **Sheath:** Oil resistant HFFR

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	HFFR compound , T12
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of optimum pitch
Inner Sheath	HFFR compound, TM2
Screen	RAL 7001,Grey
Outer sheath	HFFR compound, TM2
Sheath colour	RAL 7001,Grey or Transparent

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13 VDE 0245-102 [Designed according to]
Insulation resistance	Min. 20 Mohm.km
Rated voltage U₀/U	300 V/500 V
Test voltage	4000 V
Temperature range	Fixed: - 40 °C ~ + 70 °C; Mobile: - 5 °C ~ + 70 °C
Min. bending radius	Fixed: 4 x D; Mobile: 12,5 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
EMC	ELECTROMAGNETIC COMPATIBILITY

YSLY

Özellikler / Features

300/500 V PVC izoleli kablolar
300/500 V PVC insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
 2. **İzole:** PVC
 3. **Kılıf:** Yağlara dayanıklı PVC
1. **Conductor:** Flexible copper
 2. **Insulation:** PVC
 3. **Sheath:** Oil resistant PVC

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound , T12
Flame Barrier	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of optimum pitch
Outer sheath	PVC compound, TM2
Sheath colour	RAL 7001,Grey

Technical Data

Min. Bending Radius	TS HD 21.13 S1, DIN VDE 0281-13 VDE 0245-102 [Designed according to]
Conductor Resistance(max.)	Min. 20 M \cdot km
Operating Voltage	300 V/500 V
Test Voltage [50 Hz]	2000 V
Insulation Resistance	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Temperature Range	Fixed: 4 x D; Mobile: 12,5 x D
Flame test	IEC 60332-1 & EN 50265-2-1



YSLYCY

Özellikler / Features

300/500 V PVC izoleli kablolar
300/500 V PVC insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
 2. **İzole:** PVC
 3. **Dolgu:** PVC
 4. **Ekran:** Kalaylı Bakır
 5. **Kılıf:** Yağlara dayanıklı PVC
1. **Conductor:** Flexible copper
 2. **Insulation:** PVC
 3. **Filler:** PVC
 4. **Screen:** Tinned copper
 5. **Sheath:** Oil resistant PVC

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound , T12
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of optimum pitch
Inner Sheath	PVC compound, TM2
Screen	RAL 7001,Grey
Outer sheath	PVC compound, TM2
Sheath colour	RAL 7001,Grey or Transparent

TABLO SIRASI HEPSİNDE AYNI OLACAK

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13 VDE 0245-102 [Designed according to]
Insulation resistance	Min. 20 Mohm.km
Rated voltage U₀/U	300 V/500 V
Test voltage	4000 V
Temperature range	Fixed: - 40 °C ~ + 70 °C; Mobile: - 5 °C ~ + 70 °C
Min. bending radius	Fixed: 4 x D; Mobile: 12,5 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
EMC	ELECTROMAGNETIC COMPATIBILITY

H05VV5-F [NYSLYÖ-JZ/OZ]

Özellikler / Features

300/500 V PVC izoleli kablolar
300/500 V PVC insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
 2. **İzole:** PVC
 3. **Kılıf:** Yağlara dayanıklı PVC
1. **Conductor:** Flexible copper
 2. **Insulation:** PVC
 3. **Sheath:** Oil resistant PVC

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound , TI2
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of optimum pitch
Outer sheath	Oil and flame resistant PVC compound, TM5
Sheath colour	RAL 7001,Grey

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13
Insulation resistance	Min. 20 M Ω .km
Rated voltage U₀/U	300 / 500V
Test voltage	2000 V
Temperature range	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Min. bending radius	Fixed: 4 x D; Mobile: 12,5 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
Oil test	IEC 60811-2-1



H05VVC4V5-K [NYSLYCYÖ-JZ/OZ]

Özellikler / Features

300/500 V PVC izoleli yağlara dayanıklı kablolar

300/500 V PVC insulation cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
2. **İzole:** PVC
3. **Dolgu:** PVC
4. **Ekran:** Kalaylı Bakır
5. **Kılıf:** Yağlara dayanıklı PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Filler:** PVC
4. **Screen:** Tinned copper
5. **Sheath:** Oil resistant PVC

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound , T12
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Inner Sheath	PVC compound, TM2; RAL 7001,Grey
Screen	Braid of tinned copper wires, 85% coverage
Outer sheath	Oil and flame resistant PVC compound, TM5
Sheath colour	RAL 7001, Grey

TABLO SIRASI HEPSİNDE AYNI OLACAK

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13
Insulation resistance	Min. 20 Mohm.km
Rated voltage U₀/U	300 / 500V
Test voltage	2000 V
Temperature range	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Min. bending radius	Fixed: 4 x D; Mobile: 12,5 x D
Flame retardance test	EC 60332-1 & EN 50265-2-1
Oil test	IEC 60811-2-1
Transfer impedance	Max. 250 ohm/km at 30MHZ
EMC	ELECTROMAGNETIC COMPATIBILITY

YSLYSY

Özellikler / Features

300/500 V PVC izoleli çelik tel örgü zırlı kablolar
300/500 V PVC insulation steel wire braid armour cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
 2. **İzole:** PVC
 3. **Dolgu:** PVC
 4. **Ekran:** Çelik Tel
 5. **Kılıf:** Şeffaf PVC
1. **Conductor:** Flexible copper
 2. **Insulation:** PVC
 3. **Filler:** PVC
 4. **Screen:** Steel wire
 5. **Sheath:** Transparent PVC

Cable Design

Sheath colour	RAL 7001,Grey or Transparent
Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound , T12
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of optimum pitch
Inner Sheath	PVC compound, RAL 7001,Grey
Screen	Braid of galvanised steel wires, approx. %85 cove.
Outer sheath	PVC compound, TM2

Technical Data

Min. bending radius	Fixed: 4 x D; Mobile: 12,5 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
Temperature range	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Standard	TS HD 21.13 S1, DIN VDE 0281-13 VDE 0245-102 [Designed according to]
Insulation resistance	Min. 20 Mohm.km
Rated voltage Uo/U	300 / 500V
Test voltage	4000 V



2YSLCY-J

Özellikler / Features

300/500 V PE izoleli PVC kılıflı kablolar

300/500 V PE insulation PVC sheathing cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
2. **İzole:** PE
3. **Ayırıcı:** Polyester bant
4. **Ekran:** Kalaylı Bakır
5. **Kılıf:** Yağlara dayanıklı PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Separator:** Polyester tape
4. **Screen:** Tinned copper
5. **Sheath:** Oil resistant PVC

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PE compound
Core identification	Four cores: Black, brown, blue, green-yellow coloured cores
Lay-up	Cores laid up in layers of optimum pitch
Separator	Polyester tape
1.Screen	Aluminium polyester tape
2.Screen	Braid of tinned copper wires, approx. %80 coverage
Outer Sheath	PVC compound
Sheath Colour	RAL 7001,Grey

Technical Data

Standard	VDE 0250
Insulation resistance	Min. 200 Mohm.km
Mutual capacitance	Core / core: 70 ~ 250 nF/km Core / screen:110 ~ 410 nF/km
Rated voltage U₀/U	0,6/1 kV
Test voltage	4000 V
Temperature range	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Min. bending radius	Fixed: 7,5 x D; Mobile: 15 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
EMC	ELECTROMAGNETIC COMPATIBILITY

0,6/1 kV CONTROL CABLE

Özellikler / Features

0,6/1 kV PVC izoleli ekranlı kablolar

0,6/1 kV PVC insulation screening cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
2. **İzole:** PVC
3. **Dolgu:** PVC
4. **Ekran:** Bakır örgü veya örgüsüz
5. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Filler:** PVC
4. **Screen:** Copper screen or No screen
5. **Sheath:** PVC

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound , T12
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of optimum pitch
Inner Sheath	PVC compound, TM2; RAL 7001,Grey
Screen	Braid of tinned copper wires, 85% coverage
Outer sheath	Oil and flame resistant PVC compound, TM5
Sheath colour	RAL 9005, Black

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13 [Designed according to]
Insulation resistance	Min. 50 Mohm.km
Rated voltage U₀/U	0,6/1 kV
Test voltage	4000 V
Temperature range	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Min. bending radius	Fixed: 6 x D; Mobile: 12,5 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
Oil test	IEC 60811-2-1
Transfer impedance	Max. 250 ohm/km at 30MHZ
EMC	ELECTROMAGNETIC COMPATIBILITY



HIGH FLEXIBLE CONTROL CABLE

Özellikler / Features

300/500 V PVC izoleli fleksibil PVC kılıflı kablolar
300/500 V PVC insulation flexible PVC sheathing cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok ince telli som bakır
 2. **İzole:** PVC
 3. **Ayırıcı:** Tekstil bant
 4. **Dolgu:** PVC
 5. **Ekran:** Kalaylı Bakır
 6. **Kılıf:** Yağlara dayanıklı PVC
-
1. **Conductor:** High Flexible copper
 2. **Insulation:** PVC
 3. **Separator:** Textile tape
 4. **Filler:** PVC
 5. **Screen:** Tinned copper
 6. **Sheath:** Oil resistant PVC

Cable Design

Conductor	Extra flexible copper wires, plain; IEC 60228 Class 6, TS/DIN EN 60228 Class 6
Insulation	Speacial PVC compound
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of shorten optimum pitch
Separator	Textile bandaging
Inner Sheath	PVC compound, TM2; RAL 7001,Grey
Screen	Braid of tinned copper wires, 85% coverage
Outer sheath	Oil and flame resistant PVC compound, TM5
Sheath colour	RAL 7001,Grey

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13 [Designed according to]
Insulation resistance	Min. 50 Mohm.km
Rated voltage U₀/U	300 / 500V
Test voltage	2000 V
Temperature range	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Min. bending radius	Fixed: 4 x D; Mobile: 7,5 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
Oil test	IEC 60811-2-1
Transfer impedance	Max. 250 ohm/km at 30MHZ
EMC	ELECTROMAGNETIC COMPATIBILITY

YSLCY

Özellikler / Features

300/500 V PVC izoleli ekranlı kablolar
300/500 V PVC insulation screening cable

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli som bakır
 2. **İzole:** PVC
 3. **Ayırıcı:** Polyester bant
 4. **Ekran:** Bakır örgü
 5. **Kılıf:** PVC
1. **Conductor:** Flexible copper
 2. **Insulation:** PVC
 3. **Separator:** Polyester tape
 4. **Screen:** Copper sheath
 5. **Sheath:** PVC

Cable Design

Conductor	Flexible copper wires, plain; IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound , T12
Core identification	Acc. to TS/DIN EN 50334 black cores with white numerals with green/yellow from 3 cores
Lay-up	Cores laid up in layers of optimum pitch
Separator	Polyester tape
Screen	Braid of tinned copper wires, 85% coverage
Outer Sheath	PVC compound, TM2
Sheath Colour	RAL 7001,

Technical Data

Standard	TS HD 21.13 S1, DIN VDE 0281-13 VDE 0245-102
Insulation resistance	Min. 20 Mohm.km
Rated voltage U₀/U	300 / 500V
Test voltage	4000 V
Temperature range	Fixed: - 40 oC ~ + 70 oC; Mobile: - 5 oC ~ + 70 oC
Min. bending radius	Fixed: 4 x D; Mobile: 7,5 x D



Seslendirme Kabloları

Audio Cables

MİKROFON KABLOLARI

Özellikler / Features

Düşük kapasiteli ekranlı profesyonel mikrofon kabloları

Low-capacity cables professional microphone screen

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır

2. **İzole:** PE

3. **Ekran 1:** Bakır ekran

4. **Ekran 2:** Bakır ekran

5. **Kılıf:** Mat PVC

1. **Conductor:** Flexible copper

2. **Insulation:** PE

3. **Screen 1:** Copper screen

4. **Screen 2:** Copper screen

5. **Sheath:** Mat PVC

Cable Design

Conductor	18x 0.10 mm [4x0.14 mm ²] Stranded OFC Wires
Insulation	Ø 1.0 mm PE, red-blue, pink-blue
Separator	Fleece Wrapping
1. Shielding	Bare copper spiral shield, 100% Coverage
2. Shielding	Bare copper spiral shield, 100% Coverage
Outer Sheath	Ø 3.7 mm Flexible PVC, Matt; Color: Black, gray
Standard Packing	300 m Carton Spool
Cable Weight(approx.)	28 kg/km

Electrical Properties

Conductor Resistance(max.)	135 ohm/km
Shield Resistance	<20 ohm/km
Capacitance(max.) [Core /Core-Core / Cores+Shield]	65nF/km -120 nF/km
Test Voltage [50 Hz] [Core/Core - Core/Screen]	500 V-500 V
Insulation Resistance	>3.6 G.ohmxkm
Temperature Range	Fixed -30 °C.....+70 °C



HOPARLÖR KABLolarI

Özellikler / Features

Ses ve Hi-Fi sistemleri için hoparlör kabloları

Audio and hi-fi systems for speaker cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PVC ve ya HFFR
3. **Kılıf:** PVC ve ya HFFR

1. **Conductor:** Flexible copper
2. **Insulation:** PVC or HFFR
3. **Sheath:** PVC or HFFR

Cable Design

Conductor	224x 0.15 mm [2x4.0mm ²] Stranded Bare OFC Wire
Insulation	Ø 3.90 mm FRNC blue, red
Outer Sheath	Ø9.4 mm FRNC; Color: Dark Gray, Black
Standard Packing	100/500 m Plywood Spool 1000 m Wooden Spool
Cable Weight[approx.]	171 kg/km

Electrical Properties

Conductor Resistance[max.]	4.95 ohm/km
Operating Voltage	300 V
Test Voltage [50 Hz]	2000 V
Insulation Resistance	>200 M.ohmxkm
Temperature Range	Fixed -30 °C.....+70 °C



AES/EBU CABLES

Özellikler / Features

AES/EBU ses ve dijital sinyal iletim kabloları

AES/EBU audio and digital signal transmission cables

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** Köpük PE
3. **Ekran:** Alpet + Bakır ekran
4. **Kılıf:** PVC ve ya HFFR

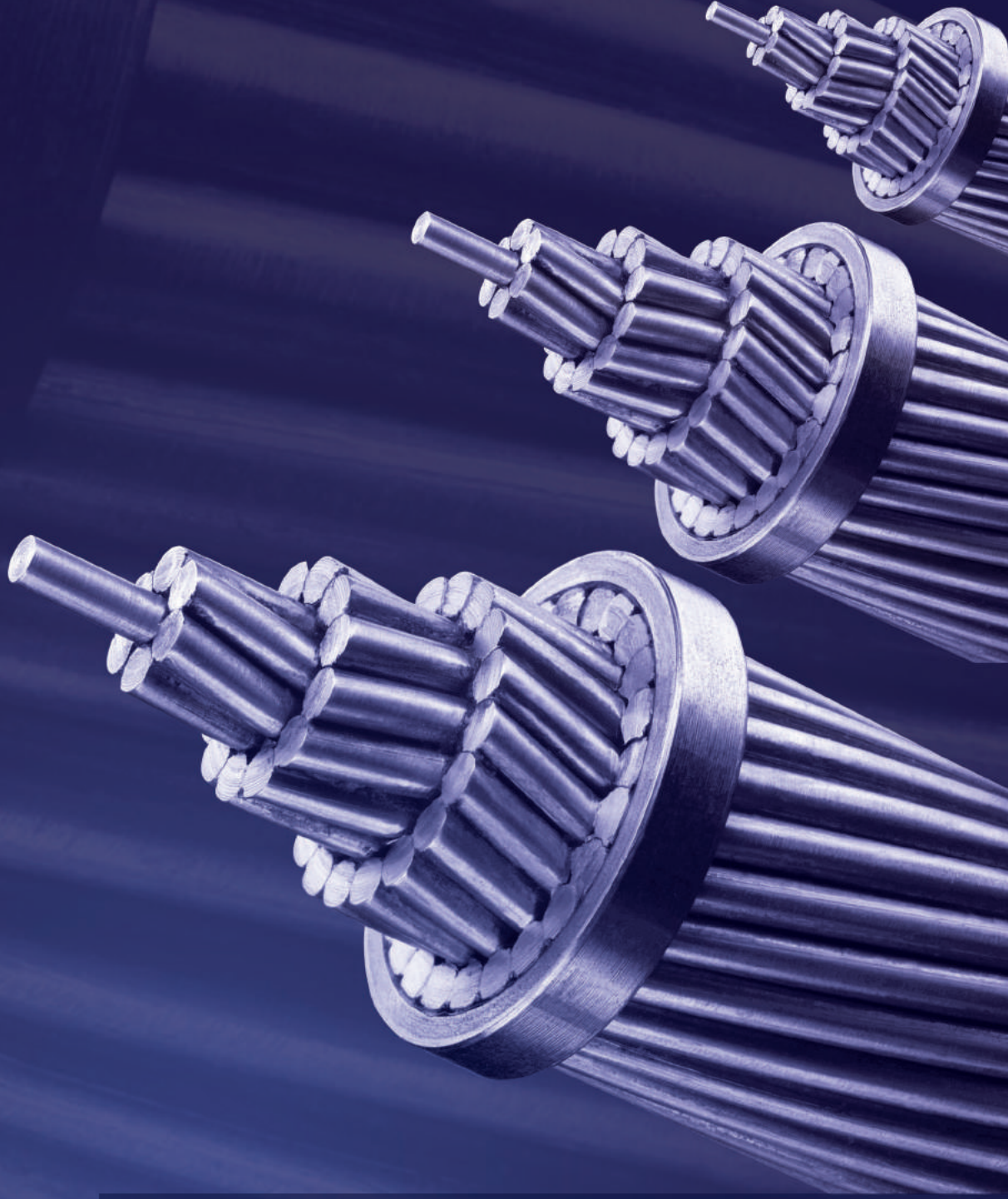
1. **Conductor:** Flexible copper
2. **Insulation:** PVC or HFFR
3. **Screen:** Alpet + Copper screen
4. **Sheath:** PVC or HFFR

Cable Design

Conductor	7x 0.20 mm [2x0.22 mm ²] Stranded tinned copper wires
Insulation	Ø 1.55 Foam Skin PE red, white
Filler	PP Cords
1. Shielding	Bare copper spiral shield, 100% Coverage
2. Shielding	Bare copper spiral shield, 100% Coverage
Separator	Fleece Wrapping
Outer Sheath	Ø 6.2 mm FRNC, Purple
Standard Packing	100 m Carton Spool
Cable Weight(approx.)	52 kg/km

Electrical Properties

Conductor Resistance(max.)	86 ohm/km
Impedance [1-6 kHz]	110 ohm
Shield Resistance	<40 ohm/km
Capacitance(max.) [Core /Core-Core / Cores+Shield]	50nF/km -100 nF/km
Test Voltage [50 Hz] [Core/Core - Core/Screen]	500 V-500 V
Attenuations [max. dB/100 m]	1MHz... 2.0 dB/100 m; 6MHz... 6.0 dB/100 m
Insulation Resistance	>5 G.ohmxkm
Temperature Range	Fixed -30 °C.....+70 °C



Esnek Alüminyum Enerji Kabloları

Flexible Aluminium Energy Cables



FLALRY ALUMINIUM CABLE

Özellikler / Features

Esnek alüminyum iletkenlerden oluşan yapısı ile otomotiv ve enerji hatlarında avantaj sağlamaktadır.

Flexible aluminium wire use automotive and energy sector

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli alüminyum
2. **İzole:** PVC

1. **Conductor:** Flexible aluminium
2. **Insulation:** PVC

Nominal Cross-section	Conductor Construction				Insulation Wall thickness min.	Cable		Weight approx. kg/km
	No. of strands	Diam. of single wire max.	Diam. of conductor max.	Electrical resistance at 20 °C max		Outer diameter		
						max.	Limit tolerance	
mm ²		mm	mm	m.ohm/m	mm	mm		

FLALRY

0,75	11	0,3	1,3	43,6	0,24	1,9	-0,2	5,0
1	16	0,29	1,5	32,7	0,24	2,1	-0,2	6,0
1,25	16	0,32	1,7	24,8	0,24	2,3	-0,2	7,0
1,5	16	0,35	1,8	21,2	0,24	2,4	-0,2	8,0
2	15	0,42	2,0	15,7	0,28	2,8	-0,3	10,0
2,5	19	0,42	2,2	12,7	0,28	3,0	-0,3	12,0
3	23	0,42	2,4	10,2	0,32	3,4	-0,3	15,0
4	30	0,42	2,8	7,85	0,32	3,7	-0,3	18,0
5	36	0,42	3,1	6,57	0,32	4,2	-0,3	23,0
6	45	0,42	3,4	5,23	0,32	4,3	-0,3	25,0
8	59	0,42	4,3	3,97	0,32	5,0	-0,4	29,0
10	50	0,52	4,5	3,03	0,48	6,0	-0,7	44,0
12	60	0,52	5,4	2,53	0,48	6,5	-0,7	50,0
16	78	0,52	5,8	1,93	0,52	7,2	-0,8	65,0
20	95	0,52	6,9	1,59	0,52	7,8	-0,8	75,0
25	122	0,52	7,2	1,24	0,52	8,7	-0,8	91,0
30	141	0,52	8,3	1,08	0,64	9,6	-0,9	110,0
35	172	0,52	8,5	0,878	0,64	10,4	-1,0	132,0
40	193	0,52	9,6	0,788	0,71	11,1	-1,1	148,0
50	247	0,52	10,5	0,613	0,71	12,2	-1,2	183,0
60	289	0,52	11,6	0,525	0,80	13,3	-1,3	217,0
70	351	0,52	12,5	0,432	0,80	14,4	-1,4	253,0
85	420	0,72	13,6	0,365	0,90	15,8	-1,4	305,0
95	463	0,72	14,8	0,327	0,90	16,7	-1,4	334,0



Gemi ve Yat Kabloları

Ship Type and Yacht Cables

MYY

Özellikler / Features

Gemi yapım ve onarımlarında güç aydınlatma kuvvet kontrol devrelerinde kullanılır.

It is used in power lighting control circuits in shipbuilding and repair.

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PVC
3. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Sheath:** PVC

Cable Design

Conductor	Flexible copper wires, plain IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound
Lay-up	Cores laid up in layers of optimum pitch
Inner Sheath	PVC compound
Outer Sheath	Oil and flame resistant special PVC compound
Sheath colour	Black

Electrical Properties

Standard	IEC 92-3, TS 2957
Insulation resistance	>20 M Ω .km
Rated voltage	0.6/1 kV
Test voltage	4000 V
Temperature range	Fixed : - 30 oC ~ + 70 oC Mobile : - 5 oC ~ + 50 oC
Min. bending radius	Single-core:15 x D Multi-core:12 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1



MYCY

Özellikler / Features

Gemi yapım ve onarımlarında güç aydınlatma kuvvet kontrol devrelerinde kullanılır.

It is used in power lighting control circuits in shipbuilding and repair.

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** PVC
3. **Dolgu :** PVC
4. **Ekran:** Bakır Örgü
5. **Kılıf:** PVC

1. **Conductor:** Flexible copper
2. **Insulation:** PVC
3. **Filler:** PVC
4. **Screen:** Copper Braid
5. **Sheath:** PVC

Cable Design

Conductor	Flexible copper wires, plain IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	PVC compound
Lay-up	Cores laid up in layers of optimum pitch
Inner Sheath	PVC compound
Screen	Braid of plain Cu wires, %85 coverage
Outer Sheath	Oil and flame resistant special PVC compound
Sheath colour	Black

Electrical Properties

Standard	IEC 92-3,TS 2957
Insulation resistance	>20 Mohm.km
Rated voltage	0.6/1 kV
Test voltage	4000 V
Temperature range	Fixed : - 30 oC ~ + 70 oC Mobile : - 5 oC ~ + 50 oC
Min. bending radius	Single-core:15 x D Multi-core:12 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1

DOLPHINE POWER-YACHTH

Özellikler / Features

Tekne, yat ve deniz vasıtalarında güç ve aydıtlatma kabloları olarak kullanılır.

It is used as power and lighting cables in boats, yachts and marine vessels.

Kablo Yapısı / Cable Structure

1. **İletken:** Flexible Bakır
2. **Ayırıcı:** Polyester Bant
3. **İzole:** PVC
4. **Ekran:** Alüminyum bant
5. **Kılıf:** PVC

1. **Conductor:** Flexible aluminium
2. **Separator:** Polyester tape
3. **Insulation:** PVC
4. **Ekran:** AL-tape
5. **Sheath:** PVC

Cable Design

Conductor	Flexible copper wires, tined IEC 60228 Class 5, TS/DIN EN 60228 Class 5
Insulation	Speacial PVC compound Note: Other core configurations manufactured upon request.
Sheath Colour	Blue-White & Red-White

Electrical Properties

Standard	IEC 92-3 & TS 2957 [Designed according to]
Insulation resistance	>20 Mohm.km
Temperature range	Fixed :- 30 oC ~ + 70 oC Mobile :- 5 oC ~ + 50 oC
Min. bending radius	10 x D
Flame retardance test	IEC 60332-1 & EN 50265-2-1
Rated voltage	450/750 V
Test voltage	2500 V



Yenilenebilir Enerji Kabloları

Renewable Energy Cables

SOLAR ENERGY CABLE / PV1-F

Özellikler / Features

Solar kablolar açık ve kapalı mekan uygulamalarında güneş panelleri ile inverter arasında bağlantı kablosu olarak tasarlanmıştır. İnsan hayatının, değerli malzemelerin ve ekipmanların korunması gereken yerlerde kullanılırlar.

Solar cables are intended for use in outdoor applications for the connection between the solar panels and a possible connection from those to the inverter. They are used in places where human life and valuable materials and equipment need to be protected.

Kablo Yapısı / Cable Structure

1. **İletken:** IEC 60228; DIN VDE 0295; EN 60228 Sınıf-5 Kalaylı Elektrolitik Bükülü Bakır
2. **İzole:** Özel Bağlı Çapraz HFFR Kompaund
3. **Yalıtım Rengi :** Beyaz
4. **Kılıf:** Özel Bağlı Çapraz HFFR Kompaund
5. **Kılıf Rengi:** Siyah / Mavi / Kırmızı

1. **Conductor:** IEC 60228; DIN VDE 0295; EN 60228 Class-5 Stranded Electrolytic Tinned Copper
2. **Insulation:** Special Cross Linked HFFR Compaund
3. **Colour Code:** White
4. **Sheath:** Special Cross Linked HFFR Compaund
5. **Sheath Colour:** Black / Blue / Red

Alev Geciktiricilik Testi Flame Retardant Test	IEC 60332-1-2 VDE 0482-332-1-2 EN 60332-1-2 BS EN 60332-1-2
Alev Yayılımı Testi Flame Propagation Test	IEC 60332-3-24 VDE 0482-332-3-24 EN 60332-3-24 BS EN 60332-3-24
Duman Yoğunluğu Testi Smoke Density Test	IEC 61034-2 VDE 0482-1034-2 EN 61034-2 BS EN 61034-2
Korozif Gaz Testi Test On Corrosiveness Combustion Gases	IEC 60754-2 VDE 0482-267-2-3 EN 50267-2-3 BS EN 50267-2-3
Halojenizlik Testi Halogen Free Test	IEC 60754-1 VDE 0482-267-2-1 EN 50267-2-1 BS EN 50267-2-1
Petrole Karşı Dayanım Resistance to Petroleum	24 hour [100 C (DIN VDE 0473 811 21 - DIN EN 608 11-2-1)
Ozana Karşı Dayanım Ozone Resistance	DIN EN 50396 HD 22.2 Test Type B
Uv Dayanımı Uv Resistance	UL 1581 , iso 4892-2 [meth.1] - HD 605 (A1 - 2 - 4. 20.



WIND ENERGY TURBINE CABLE

Özellikler / Features

Rüzgar enerji türbinlerinde kumanda amaçlı kullanılan esnek kablolardır.

Wind is flexible cables used for control in energy turbines.

Kablo Yapısı / Cable Structure

1. **İletken:** Çok telli bakır
2. **İzole:** HFFR
3. **Kılıf:** PUR

1. **Conductor:** Flexible copper
2. **Insulation:** HFFR
3. **Sheath:** PUR

Number of cores x cross section	Overall diameter approx	Tolerance	Conductor Resistance max.	Weight approx
N x mm ²	mm	mm	ohm/m	kg/km
C12YC11Y-J/-O				
2 x 1.0 + S	6.3	0.5	19.5	60
3 x 1.0 + S	6.6	0.5	19.5	72
4 x 1.5 + S	9.0	0.5	13.3	123
4 x 2.5 + S	9.6	0.5	7.98	163
5 x 2.5 + S	10.3	0.5	7.98	196
5 x 16 + S	20.1	1.0	1.21	961
7 x 1.5 + S	10.6	0.5	13.3	192
25 x 0.75 + S	15.1	0.5	26.0	344
C12Y11Y-J/-O				
3x1.0	6.0	0.5	19.5	52
4x1.5	7.3	0.5	13.3	98
7x1.5	10.0	0.5	13.3	146

HEAT TRACKING CABLES

Özellikler / Features

CUNI DIN CEN/TS 13388:2004 standartına uygun rezistans iletkenlerden oluşan kablo ısıtma ihtiyacı duyulan sistemlerde esnek yapısı ve dayanıklı yalıtımı ile istenilen sıcaklık değerlerini elde edebilir.

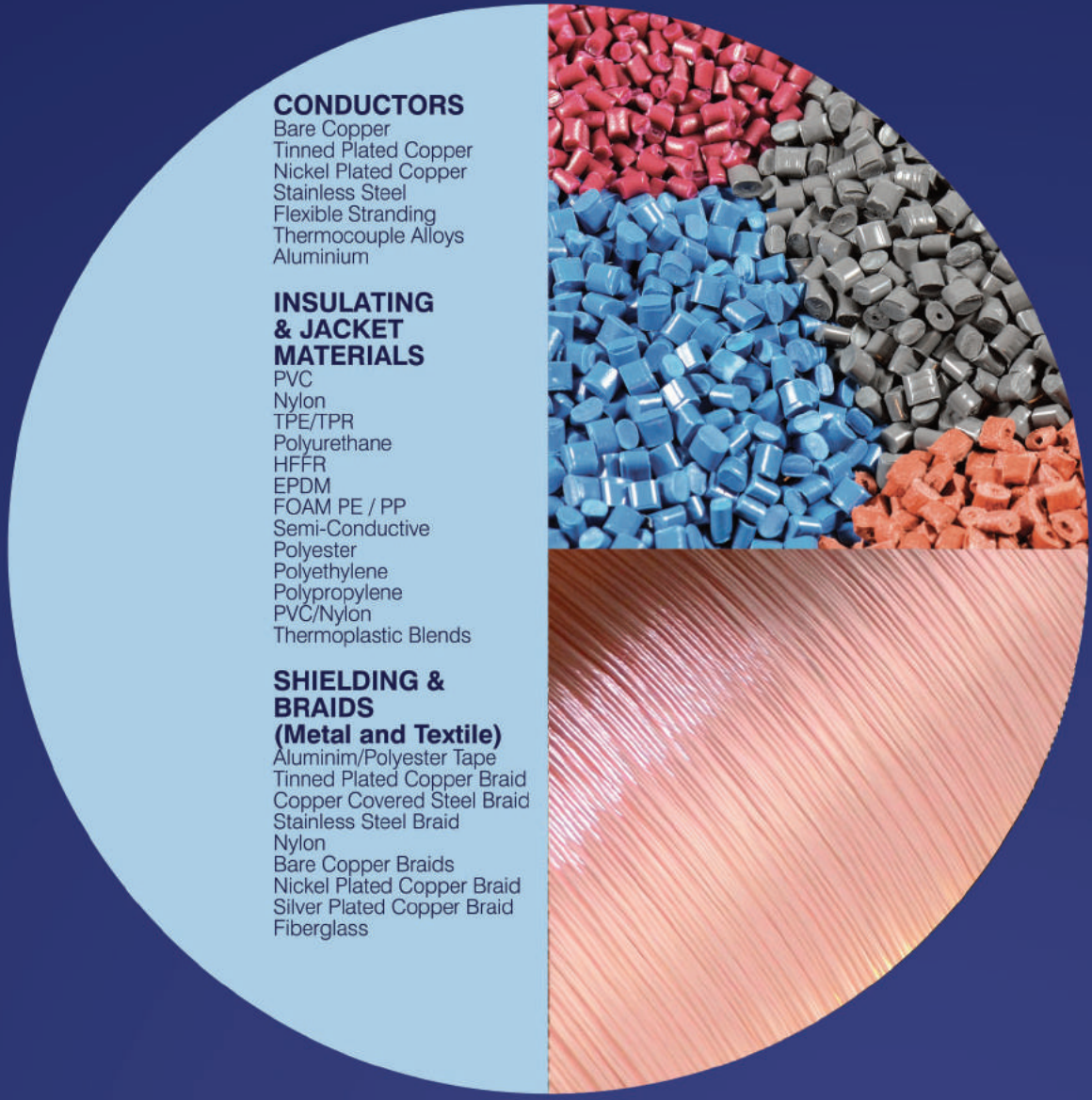
CUNI DIN CEN / TS 13388: 2004 standard cable resistance heating in the need of systems consisting of resistance conductors and flexible insulation can achieve the desired temperature values.

Kablo Yapısı / Cable Structure

1. **İletken:** CUNI , Özel flexible paslanmaz çelik
2. **İzole:** ETFE , TPE-E

1. **Conductor:** CUNI , Special flexible stainless steel
2. **Insulation:** ETFE , TPE-E

Nom. Cross-Section	Nom. Single Wire Diameter	No. of Wires Ref. Value	Nom. Conductor-diameter	Nom. wall-thickness	Min. wall thickness	Outer diameter	Max. Conductor Resistance at 20° C
mm ²	mm	mm	mm	mm	mm	mm	ohm/km
0,008	0,125	7	0,37	0,27	0,20	0,95-0,10	6300,00



CONDUCTORS

Bare Copper
Tinned Plated Copper
Nickel Plated Copper
Stainless Steel
Flexible Stranding
Thermocouple Alloys
Aluminium

INSULATING & JACKET MATERIALS

PVC
Nylon
TPE/TPR
Polyurethane
HFFR
EPDM
FOAM PE / PP
Semi-Conductive
Polyester
Polyethylene
Polypropylene
PVC/Nylon
Thermoplastic Blends

SHIELDING & BRAIDS

(Metal and Textile)
Aluminium/Polyester Tape
Tinned Plated Copper Braid
Copper Covered Steel Braid
Stainless Steel Braid
Nylon
Bare Copper Braids
Nickel Plated Copper Braid
Silver Plated Copper Braid
Fiberglass

Teknik Veriler

Technical Information

TECHNICAL INFORMATION

HARMONISED CABLES SYMBOLS

HARMONISED CABLES

Regulation designation

H:	Harmonised regulation
A:	Approved national design

Rated Voltage

01	100/100 V
03	300/300 V
05	300/500 V
07	450/750 V
11	600/1000 V

Insulation material

V	Polyvinylchloride (PVC)
V2	PVC, up to +90°C
V3	PVC for low temperatures
B	Ethylenepropylene (EPR)
E	Polyethylene
X	XLPE (cross-linked PE)
R	Rubber
S	Silicone Rubber

Sheath or braiding materials

V	Polyvinylchloride (PVC)
V2	PVC, up to +90°C
V3	PVC for low temperatures
V5	PVC, oil resistance
R	Rubber

Special construction features

H	Flat divisible cables
H2	Flat non-divisible cables
H6	Flat non-divisible cables, for elevators
H8	Spiral cables

Conductor type

U	Single-wire round conductor
R	Multiple-wire round conductor
K	Fine stranded (for cables for fixed installations)
F	Fine strands (for flexible cables)
H	Extra fine strands
D	Fine stranded for welding cables
E	Extra fine strands for welding cables

Protective earthing conductor

X	Without protective earthing conductor
G	With protective earthing conductor

N	Chloroprene rubber
Q	Polyurethane
C4	Screen of copper wire braiding
J	Glass fibre braiding
T	Textile braiding

CABLE SYMBOLS ACCORDING TO VDE STANDARDS

TELECOMMUNICATIONS CABLES AND WIRES

A	Outdoor cable
G	Mining cables
J	Installation cables and wires
L	Multicore cables
S	Switchboard cables - Signal cable
JE	Installation cables and wire for industrial electronic
Li	Stranded wire conductor

Insulation material:

P	Paper insulation
Y	Polyvinylchloride PVC
2Y	Polyethylene (PE)
3Y	PS, polystyrene
5Y	PTFE
6Y	FEP
7Y	ETFE
02Y	Foam PE, cellular polyethylene
02YS	Foam-skin PE

Structural Features:

F	Cable core assembly with filling
Yv	PVC reinforced sheath
2Yv	PE reinforced sheath
[C]	Screen of Copper wire braid
[L]	Screen of plastic-coated aluminium tape
[St]	Metal foil screen
D	Concentric layer of copper wires
[Z]	Steel wire braid
M	Lead sheath
Mz	Lead sheath with added hardener
L	Aluminium sheath, smooth
LD	Corrugated Aluminium sheath
W	Corrugated steel sheath
[L]2Y	Laminated sheath
b	Armouring
c	Protective covering of jute
E	PVC tape
[T]	Support wire for aerial cable
STIII	Star quads in local cables
STI	Star quads for larger distances
ST	Star quads for use of phantom circuits
F	Star quads for railway use
PiMF	Pair in metal foil
TiMF	Triad in metal foil
ViMF	Quad in metal foil
Bd	Laid up in bundles
Lg	Laid up in layers

CABLE SYMBOLS ACORDING TO VDE STANDARD

POWER CABLES

Conductor type:

N VDE - standard
[N] On the basis of VDE - standard

Conductor material:

Cu Copper
A Aluminium

Insulation material:

H Halogen Free [HFFR]
Y Polyvinylchloride [PVC]
2Y Polyethylene [PE]
2X Cross-linked PE [XLPE]

Concentric conductor, screen:

C Concentric copper conductor
CW Consentric copper conductor, in wave conal formation
CE Consentric copper conductor over each core
S Copper screen
SE Copper screen and conductive layer

Armouring:

F Armour of flat wires
R Armour of round wires
B Steel tape armour

Sheath material:

Y PVC
2Y PE

Protective earthing conductor:

J With protective conductor
O Without protective earthing conductor

Conductor type:

r... Round conductor
s... Sector-shaped conductor
o... Oval-shaped conductor
re Single-wire conductor
Rm Multiple-wire conductor
V Compact conductor

PERFORMANCE TEST OF USED ON TO HALOGEN FIRE CABLES

1- IEC 60332-1, VDE 0482-332-1-2, EN 60332-1-2, BS EN 60332-1-2 TEST FOR RESISTANCE TO VERTICAL FLAME DIFFUSION OF A SINGLE INSULATED CONDUCTOR OR CABLE 1 KW PRE-MIXED FLAME

2- IEC 60332-3-22, VDE 0482-60332-3-22, EN 60332-3-22, BS EN 60332-3-22 [CAT A] TEST FOR VERTICAL FLAME DIFFUSION ON VERTICALLY FIXED WIRE OR CABLE BUNDLES

3- IEC 61034-2, VDE 0482-1034-2, EN 61034-2, BS EN 61034-2 MEASUREMENT OF SMOKE DENSITY OF CABLES BURNT UNDER CERTAIN CONDITIONS

4- IEC 60754-1-2, VDE 0482-267-2-1, 2 and 3, EN 50267-2-1,2 and 3, BS EN 50267-2-1,2 and 3 DETERMINATION OF HALOGEN ACID GAS, MEASUREMENT OF PH AND CONDUCTIVITY

5- IEC 60331-21/23 TEST ON INSULATION INTEGRITY

6- IEC 60331-1/2, VDE 0482-200, BS EN 50200, BS 8434-1,2 SPECIFICATION FOR PERFORMANCE REQUIREMENTS FOR CABLES REQUIRED TO MAINTAIN CIRCUIT INTEGRITY UNDER FIRE CONDITIONS

J-Y{St}Y...Lg FIRE ALARM AND COMMUNICATION CABLES Colour Code According To DIN VDE 0815

2 paired installation cables are stranded as star quad

1. Pair: a-core Red b-core Black
2. Pair: a-core White b-core Yellow

4 and multi-paired installation cables:

a-core of first pair in each layer is Red, other pairs are White
b-core: Blue, Yellow, Green, Brown, Black in continuous repetition

In order: From outside to inside

b-wire	Pair Number										
Blue	1	6	11	16	21	26	31	36	41	46	
Yellow	2	7	12	17	22	27	32	37	42	47	
Green	3	8	13	18	23	28	33	38	43	48	
Brown	4	9	14	19	24	29	34	39	44	49	
Black	5	10	15	20	25	30	35	40	45	50	

TECHNICAL INFORMATION

GENERAL FEATURES OF CABLES WITH 450/750/V NOMINAL VOLTAGE AND THERMOPLASTIC INSULATION AND SHEATH TS 9756 HD 21.1 S4 VDE 281/1

INSULATION :

Insulation should be made up of the thermoplastic material stated for each type of cable TI 1, TI 2, TI 4, and TI 5 types are suitable for maximum continuous temperature 70 °C and PVC insulated cables.

TI3 type is suitable for maximum continuous conductor temperature 90 °C and PVC insulated cables.

INSULATION FEATURES

TEST	UNIT	TYPE OF COMPOSITION				
		TI 1	TI 2	TI 3	TI 4	TI 5
Max. continuous conductor temperature	°C	70	70	90	70	70
Max. temperature for short circuit conditions	°C	160	160	160	160	160
Min. thermal stability at 200°C	minute	-	-	240	-	-

SHEATH:

Sheathing should be made up of the thermoplastic material stated for each type of cable.

-TM 1 type for PVC sheathed cables in fixed installation.

-TM 2 type for PVC sheathed twistable cables.

-TM 3 type for PVC sheathed heat resistant cables that conductor temperature does exceed 90 °C

-TM 5 type [H05VV5-F,H05VVC4V5-K] PVC sheathed and oil resistant cables.

-TM 6 type for PVC sheathed cables resistant to low temperature.

APPLICATION:

Sheath is extruded as a homogenous layer;

a-Over the core for single core cables.

b-Over the core groups and filler or [if exists] over the inner sheath.

FEATURES OF SHEATH

TEST	UNITE	TYPE OF COMPOSITION					
		TM 1	TM 2	TM 3	TM 4	TM 5	TM 6
Plunge into mineral oil	-	-	-	-	-	-	-
Temperature of oil	°C	-	-	-	-	90±2	-
Plunge time	hours	-	-	-	-	70x24	-
Min. thermal stability at 200°C	minute	-	-	240	-	-	-

ELECTRICAL PROPERTIES

TEST	UNITE	RATED VOLTAGE OF CABLES		
		300/300V	300/500V	450/750V
Voltage applied on semi-finished cables [aa]	V	2000	2000	2500
Voltage applied on cores [aa]	V			
Wall thickness up to 0,60mm	V	1500	1500	
Wall thickness above 0,60mm	V	2000	2000	2000
Long term resistance of insulation to direct current				
Temperature of water	°C	60±5	60±5	60±5
Voltage applied	V	220	220	220

kablem
CABLE

www.kablem.com.tr

www.kablem.com.tr



ECS ELK. ENJ. VE KABLO SİS. SAN. VE TİC. AŞ.
NOSAB 206 Sokak No: 7/2 16140 Nilüfer - Bursa / TURKEY
T: 0090 224 411 10 15 - E: info@kablem.com.tr