BITNER
CABLE FACTORY

MINING CABLES

BITNER Cable Factory
Polish manufacturer of cables and wires

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BITNER
CABLE FACTORY

Ladies and Gentlemen,

We have the pleasure to present you with our catalogue of mining cables.

For many years, we have developed various cables for the mining industry, designed for use in severe conditions. BITNER cables secure the supply of power and signal transmission in strip and Frasch process mines and in the most demanding underground excavation sites. Any failure leads to a cease in the mining process and poses a risk to the safety of miners. High temperatures, humidity and frequent mechanical exposures require cables and conductors of the greatest strength and highest quality. BITNER cables are suitable for excavation sites exposed to the risk of coal dust or methane explosion.

Our team of experienced engineers is involved in continuous improvement of the existing design, materials and production processes to provide you with top quality and reliable products. The process of developing new cables, production start-up, research in the company laboratory, qualification of raw materials and their suppliers and the production of the series are conducted and controlled in accordance with the ISO 9001:2008 and ISO 14001:2004 certified quality system.

We invite you to use this catalogue. We are confident it will meet your expectations as to the presentation of products and provide relevant information.

Quality, Innovation and Environmental Protection

KEMA Quality

CERTYFIKAT

Number: 99524

The management system of:

Zakłady Kablowe BITNER Celina Bitner
ul. Friedleina 3/3
30-009 Kraków
Poland

including the implementation meets the requirements of the standard:

ISO 9001:2008

Scope:
Designing, production and supply of cables and conductors with metal wires, insulated and bare, light pipe cables and special application conductors.

The file that forms the basis of this certificate:
99524-QUA, 2019994-QUA, 2040461-QUA, 2099303-QUA

Certificate expiry date: June 1, 2012
Certificate effective date: June 14, 2010

Certified for the first time: June 1, 2000

KEMA Quality B.V.
drs. G.J. Zoetbrood
Managing Director

KEMA Quality B.V.
Piotr Dąbrowski
Certification Manager

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KEMA Quality B.V. Utrechtseweg 310, 6812 AR Arnhem P.O. Box 5185, 6802 ED Arnhem, The Netherlands
T +31 26 356 2000 F +31 26 352 5800 www.kemaquality.com Company registration 09085396

a DEKRA company

Due to company policy, customer requirements and growing competition, for several years BITNER Cable Factory has fully implemented the ISO 9001, ISO 14001 and AQAP 2110 Quality Management System.

The Quality Management System covers the entire scope of our business, from production preparation, through manufacturing, storage, logistics, administration and waste management.

KEMA

CERTIFICATE

Number: 99524

The management system of:

Zakłady Kablowe BITNER Celina Bitner
Kraków
Poland

including the implementation meets the requirements of the standard:

AQAP 2120:2003

Scope:
Designing, production and supply of cables and conductors with metal wires, insulated and bare, light pipe cables and special application conductors.

The file that forms the basis of this certificate:
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Experience you can trust.

KEMA

CERTIFICATE

Number: 2019995

The management system of:

Zakłady Kablowe BITNER Celina Bitner
Kraków
Poland

including the implementation meets the requirements of the standard:

ISO 14001:2004

Scope:
Designing, production and supply of cables and conductors with metal wires, insulated and bare, light pipe cables and special application conductors.

The file that forms the basis of this certificate:
2019995-QUA, 2040462-QUA, 2099304-QUA

This certificate is valid until: September 1, 2012

Issued for the first time: September 1, 2003

KEMA Quality B.V.

drs. G.J. Zoetbrood
Managing Director

drs. A. Diedering
Certification Manager

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Experience you can trust.

Company profile

BITNER Cable Factory is a modern plant with:
- 17 thousand square metres of production, storage and office area;
- several hectares of land;
- modern machinery: insulation and sheathing lines, rubber cable production lines, cable twisting, braiders, complete metal facilities for production of cooper and aluminium conductors;
- an experienced staff of 300 employees;
- well-equipped company laboratories;
- an experienced technology and development team;
- quality and product certificates;
- we offer over a dozen product ranges, including a complete range of cables with a voltage rating of 3.6/6 kV, with plastic and rubber insulation and sheath.

With more than a decade of activity, the BITNER Cable Factory has achieved the position of one of the largest cable and wire manufacturers on the Polish market. Our present position is due to dynamic growth achieved thanks to our development projects and the tremendous efforts of all our staff.

What confirms the quality and effectiveness of our business is the constantly growing circle of clients and awards received:
- “Business Gazelle” award presented several times by Puls Biznesu;
- nomination for the “Poland Now” emblem;
- 1st place and the title ”European Company” in the competition of Gazeta Prawna (2007);
- the title ”Good Company 2007” in the ranking of Rzeczpospolita magazine (20 best Polish companies);
- Forbes Diamond distinction in 2008 and Forbes Diamond Award in 2009 for best company according to FORBES magazine;
- ”Electrical Product 2008” award for safety system cables and a number of awards for innovative products and solutions;
distinction in the Drives & Controls category for the L-2YYQY 2 x 6 mining control cable, in a competition of mining companies entitled “Innovative solutions in the Construction of Agricultural Machinery and Mining Equipment 2008”.

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CENTRUM ELEKTRYFIKACJI I AUTOMATYZACJI GÓRNICTWA

ZAKŁAD ATESTACJI

ATEST

Nr 06/35/A1

Opinii Technicznej Nr 06/35

kable górnicze w izolacji polietylenowej oraz powłoce i osłonie polwinitowej typu L-2YYQY

na napięcie znamionowe 300/500 V

Zakłady Kablowe BITNER w Krakowie

Institute of Innovative Technologies EMAG

Technical assessment and certificates for LV cables, control, signal and telecommunications cables intended for use in underground mining.

KOPALNIA DOŚWIADCZALNA „BARBARA"

GŁÓWNY INSTYTUT GÓRNICTWA

OPINIA TECHNICZNA Nr 33 / 09

dotycząca sprzętu strzałowego

1. Przedmiot: Przewód strzałowy typu PSY 2 x 1,5 mm² – 0,6 / 1 kV (dwużyłowy, z żyłami miedzianymi)

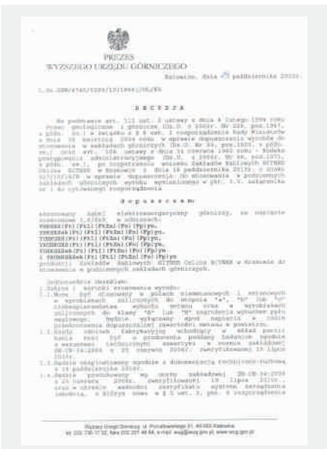
2. Producent: Zakłady Kablowe BITNER, Celina BITNER, ul. Friedleina 3/3, 30-009 Kraków, Polska

3. Miejsce produkcji: Zakłady Kablowe BITNER, Zakład Produkcyjny, 32-353 Trzyciąż 165 k/Krakowa, Polska

4. Formalna podstawa do wydania opinii:

Central Mining Institute

Technical assessment of blasting cables



PREZES WYŻSZEGO URZĘDU GÓRNICZEGO

DECYZJA

State Mining Authority

Decisions of approval for use of the MV power cables in underground mining

CHAPTER I

MINING POWER CABLES VOLTAGE RATING 0,6/1 kV

YnOGY PVC insulated and sheathed mining cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Sheathed mining cable with PVC insulated copper conductors, PVC outer sheath with increased flame propagation resistance
Temperature range:
Operating temperature: -30°C to 70°C.
Minimum installation temperature: -5°C
Maximum conductor operating temperature: 70°C
Maximum conductor temperature in short circuit: 160°C
Operating voltage: 0,6/1 kV
Test voltage:
3,2 kV (power conductors)
2 kV (control conductors)
Min. bending radius:
for fixed installation: 6 x Ø
for movable installation: 10 x Ø
Maximum tension [N]:
pulled by conductors: 50*S
pulled by the sheath (e.g. cable grip): 50*S
where: S - total cross sectional area of power conductors of the cable [mm^2]

Construction:

Conductors: copper, multi-stranded class 5 acc. to PN-EN 60228
Insulation: special PVC
Conductor colours:
power conductors: natural, red, blue
protective conductor: black corrugated
1 control conductor: brown
3 control conductors: natural, red, blue
Stranding element: parallel-stranded conductors around the central filler
Inner sheath: PVC
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Flexible cables for supplying stationary and portable electrical equipment operating in underground, open-pit and strip mines, in areas where no explosion hazard exists.
YnOGYek and **YnOGYekm** screened cables are designed for use in areas where the hazard of coal dust or methane exists.

Sample cable marking:
YnOGY 3x6+6+4 mm^2 0,6/1kV - 5-conductor cable, nominal power and protective conductor cross section: 6 mm^2, control conductor cross section: 4 mm^2, voltage rating: 0,6/1kV


mining applications


high flexibility


PN-EN 60332-1


PN-EN 60332-3
IEC 60332-3

non-flammable sheath

Cat no.	Conductors/cross section [nxmm^2]	Total conductors [n]	Number of conductors			Nominal conductor cross section			Max. outer diameter [mm]	Calculated cable weight [kg/km]
			power [n]	protective [n]	control [n]	power [mm^2]	protective [mm^2]	control [mm^2]		
GP0001	3x2,5+2,5	4	3	1		2,5	2,5		17,6	424
GP0002	3x4+4					4	4		18,6	502
GP0003	3x6+6					6	6		21,3	616
GP0004	3x10+10					10	10		24,7	800
GP0005	3x16+16					16	16		28,6	1377
GP0006	3x25+16					25	16		35,1	2050
GP0007	3x35+16					35	16		38,3	2500
GP0008	3x50+25					50	25		44,2	3435
GP0009	3x70+25					70	25		49,7	4487
GP0010	3x95+25					95	25		56,6	5780
GP0011	3x120+25					120	25		60,7	6900
GP0012	3x2,5+2,5+2,5	5	3	1	1	2,5	2,5	2,5	19,0	469
GP0013	3x4+4+4					4	4	4	20,3	588
GP0014	3x6+6+4					6	6	4	23,1	738
GP0015	3x10+10+6					10	10	6	26,8	1054
GP0016	3x4+4+3x4	7	3	1	3	4	4	4	23,0	810
GP0017	3x6+6+3x6					6	6	6	26,5	1255
GP0018	3x25+16+3x2,5					25	16	2,5	39,2	2780
GP0019	3x35+16+3x2,5					35	16	2,5	42,7	3684

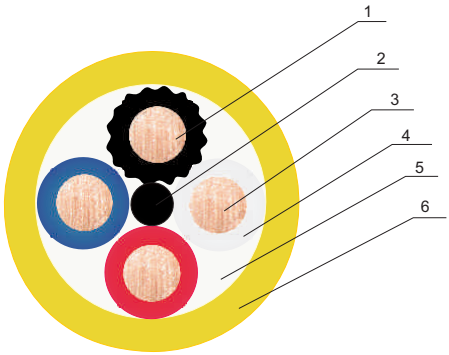
BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client request's, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

YnOGY PVC insulated and sheathed mining cable

YnOGY cable power conductor electrical specifications:

Power conductor cross section	Unit reactance	Unit inductivity	Current carrying capacity AC or DC at <25°C
[mm^2]	[Ω/km]	[mH/km]	[A]
2,5	0,110	0,35	27
4	0,101	0,32	37
6	0,101	0,32	47
10	0,097	0,31	66
16	0,094	0,30	87
25	0,094	0,30	113
35	0,091	0,29	140
50	0,091	0,29	172
70	0,088	0,28	212
95	0,088	0,28	257
120	0,085	0,27	295



1. Protective conductor
2. Central filler
3. Power conductor
4. Insulation
5. Inner sheath
6. Outer sheath

YnOGYek PVC insulated and sheathed screened mining cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Sheathed mining cable, with PVC insulated copper conductors, increased flame propagation resistance, with individual screening of semi-conducting PVC
Temperature range:
Operating temperature: -30°C to 70°C.
Minimum installation temperature: -5°C
Maximum conductor operating temperature: 70°C
Maximum conductor temperature in short circuit: 160°C
Operating voltage: 0,6/1 kV
Test voltage:
3,2 kV (power conductors)
2 kV (control conductors)
Min. bending radius:
for fixed installation: 6 x Ø
for movable installation: 10 x Ø
Maximum tension [N]:
pulled by conductors: 50*S
pulled by the sheath (e.g. cable grip): 50*S
where: S - total cross sectional area of power conductors of the cable [mm^2]

Construction:

Conductors: copper, multi-stranded class 5 acc. to PN-EN 60228
Insulation: special PVC
Conductor colours:
power conductors: natural, red, blue
protective conductor: copper, non-insulated
control conductor: brown
Individual conductor screen: extruded of semi conducting compound on each power conductor
Stranding element: screened power conductors and control conductors stranded around non-insulated protective wire
Inner sheath: PVC
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables designed for supplying stationary and portable electrical equipment operating in open-pit, strip and underground mines, in areas with and without methane in excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B”, “C” coal dust explosion hazard.

Sample cable marking:
YnOGYek 3x10+10+6 mm^2 - 0,6/1 kV sheathed, PVC insulated mining cable with three power conductors, cross section: 10 mm^2, with protective conductor: 10 mm^2, control conductor: 6 mm^2, PVC outer sheath with increased flame propagation resistance


mining applications


high flexibility


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

for explosion hazardous areas

Cat no.	Conductors/cross section [nxmm^2]	Total conductors [n]	Number of conductors			Nominal conductor cross section			Max. outer diameter [mm]	Calculated cable weight [kg/km]
			power [n]	protective [n]	control [n]	power [mm^2]	protective [mm^2]	control [mm^2]		
GP0100	3x2,5+2,5+2,5	5	3	1	1	2,5	2,5	2,5	20,2	535
GP0101	3x4+4+4					4	4	4	21,7	660
GP0102	3x6+6+4					6	6	4	24,4	850
GP0103	3x10+10+6					10	10	6	27,7	1150

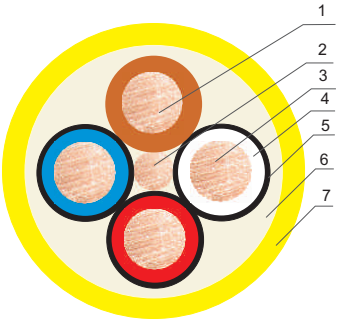
BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client request's, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

YnOGYek PVC insulated and sheathed screened mining cable

YnOGYek cable power conductor electrical specifications:

Power conductor cross section	Unit reactance	Unit inductivity	Conductor-screen capacitance	Current carrying capacity AC or DC at <25°C
[mm^2]	[Ω/km]	[mH/km]	[μF/km]	[A]
2,5	0,124	0,38	0,42	26
4	0,114	0,36	0,55	34
6	0,110	0,35	0,57	45
10	0,104	0,33	0,62	62



1. Control conductor
2. Protective conductor
3. Power conductor
4. Insulation
5. Individual screen
6. Inner sheath
7. Outer sheath

YnOGYekm PVC insulated and sheathed screened mining cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Sheathed mining cable, with copper, PVC insulated conductors, screened with copper braid, PVC outer sheath with increased flame propagation resistance
Temperature range:
Operating temperature: -30°C to 70°C.
Minimum installation temperature: -5°C
Maximum conductor operating temperature: 70°C
Maximum conductor temperature in short circuit: 160°C
Operating voltage: 0,6/1 kV
Test voltage:
3,2 kV (power conductors)
2 kV (control conductors)
Min. bending radius:
for fixed installation: 6 x Ø
for movable installation: 10 x Ø
Maximum tension [N]:
pulled by conductors: 50*S
pulled by the sheath (e.g. cable grip): 50*S
where: S - total cross sectional area of power conductors of the cable [mm^2]

Construction:

Conductors: copper, multi-stranded class 5 acc. to PN-EN 60228
Insulation: special PVC
Conductor colours:
power conductors: natural, red, blue
protective conductor: copper, non-insulated
1 control conductor: brown
3 control conductors: natural, red, blue
Individual conductor screen:
copper wire braid and plastic thread
Stranding element: screened power conductors and control conductors stranded around non-insulated protective wire
Inner sheath: PVC
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables designed for supplying stationary and portable electrical equipment operating in open-pit, strip and underground mines, in areas with and without methane, categorised as class "a", "b" or "c" methane explosion hazard, and class "A" or "B" coal dust explosion hazard.

Sample cable marking:
YnOGYekm 3x10+10+6 mm^2 - 5-conductor cable, nominal power and protective conductor cross section: 10 mm^2, control conductor cross section: 6 mm^2, voltage rating: 0,6/1kV

mining applications
high flexibility
PN-EN 60332-1
PN-EN 60332-3 IEC 60332-3
>29 non-flammable sheath
a b c A B for explosion hazardous areas

Cat no.	Conductors/cross section [nxmm^2]	Total conductors [n]	Number of conductors			Nominal conductor cross section			Max. outer diameter [mm]	Calculated cable weight [kg/km]
			power [n]	protective [n]	control [n]	power [mm^2]	protective [mm^2]	control [mm^2]		
GP0200	3x2,5+2,5+2,5	5	3	1	1	2,5	2,5	2,5	18,6	505
GP0201	3x4+4+4					4	4	4	20,0	619
GP0202	3x6+6+4					6	6	4	23,6	810
GP0203	3x10+10+6					10	10	6	25,8	1110
GP0211	3x16+16+10					16	16	10	29,8	1560
GP0212	3x25+16+16					25	16	16	35,6	2340
GP0204	3x16+16+3x1,5	7	3	1	3	16	16	1,5	30,3	1600
GP0205	3x25+16+3x2,5					25	16	2,5	38,1	2175
GP0206	3x35+16+3x2,5					35	16	2,5	41,1	2770
GP0207	3x50+25+3x4					50	25	4	47,5	3760
GP0208	3x70+35+3x4					70	35	4	54,1	5010
GP0213	3x95+35+3x4					95	35	4	63,0	6410
GP0214	3x120+50+3x4					120	50	4	67,5	8130

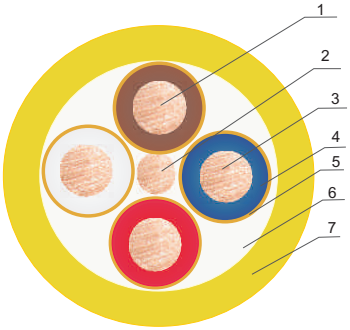
BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client request's, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

YnOGYekm PVC insulated and sheathed screened mining cable

YnOGYekm cable power conductor electrical specifications:

Power conductor cross section	Unit reactance	Unit inductivity	Unit capacitance	Current carrying capacity AC or DC at <25°C
[mm^2]	[Ω/km]	[mH/km]	[µF/km]	[A]
2,5	0,126	0,40	0,42	27
4	0,113	0,36	0,55	37
6	0,110	0,35	0,57	47
10	0,104	0,33	0,62	66
16	0,096	0,28	0,66	90
25	0,094	0,28	0,67	115
35	0,090	0,27	0,76	144
50	0,088	0,26	0,81	176
70	0,084	0,25	0,92	213
95	0,083	0,25	0,96	250
120	0,080	0,24	1,08	290



1. Control conductor
2. Protective conductor
3. Power conductor
4. Insulation
5. Individual screen
6. Inner sheath
7. Outer sheath

YnKGY-żo Mining power cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining power cable with PVC insulated and sheathed copper conductors with increased flame propagation resistance, with a green-yellow protective conductor
Temperature range:
Operating temperature: -30°C to 70°C.
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: special PVC
Conductor colours:
3 conductor cables: natural, red, yellow-green
4 conductor cables: natural, red, blue, yellow-green
5 conductor cables: natural, red, blue, black, yellow-green
Stranding element: twisted power and protective conductors
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in open-pit, strip and underground mines, except for areas where explosion hazard exists and in methane-free areas categorised as class “A” coal dust explosion hazard.

Sample cable marking:
YnKGY-żo 4x2,5 mm^2 - non-flammable 4-conductor mining power cable, nominal power and protective conductor cross section (green-yellow): 2,5 mm^2, voltage rating: 0,6/1kV


mining applications


PN-EN 60332-1


PN-EN 60332-3
IEC 60332-3

non-flammable sheath

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP0300	3x1,5	10,2	153
GP0301	4x1,5	11,1	180
GP0302	5x1,5	11,8	215
GP0303	3x2,5	11,0	195
GP0304	4x2,5	12,0	235
GP0305	5x2,5	12,9	280
GP0306	3x4	12,9	280
GP0307	4x4	14,2	345
GP0308	5x4	15,2	410
GP0309	3x6	13,9	355
GP0310	4x6	15,4	440
GP0311	5x6	16,6	525
GP0312	3x10*	16,4	520
GP0313	4x10*	18,1	655
GP0314	5x10*	19,6	790

* conductor made acc. to PN-EN 60228 class 2

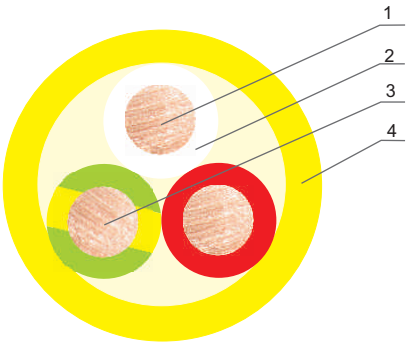
BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

YnKGY-żo Mining power cable

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
1,5	12,1	0,34	0,107	19	0,17
2,5	7,41	0,32	0,099	27	0,29
4	4,61	0,32	0,100	37	0,46
6	3,08	0,30	0,095	47	0,69
10	1,83	0,28	0,089	62	1,15

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. Protective conductor
4. Outer sheath

YKGYyn-żo Mining power cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining power cable with PVC insulated copper conductors, PVC inner and outer sheath with increased flame propagation resistance, with a green-yellow protective conductor

Temperature range:
Operating temperature: -30°C to 70°C.
Minimum installation temperature: -5°C

Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: special PVC
Conductor colours:
3 conductor cables: natural, red, yellow-green
4 conductor cables: natural, red, blue, yellow-green
5 conductor cables: natural, red, blue, black, yellow-green
Stranding element: twisted power and protective conductors
Inner sheath: PVC
Outer sheath: special, non-flammable PVC resistant to flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground mines, in areas where no explosion hazard exists, and in underground excavation sites categorised as class “A” coal dust explosion hazard.

Sample cable marking:
YKGYyn-żo 4x2,5 mm^2 - 4-conductor cable, nominal power and protective conductor cross section (green-yellow): 2,5 mm^2, voltage rating: 0,6/1kV


mining applications


PN-EN 60332-1


PN-EN 60332-3
IEC 60332-3

non-flammable sheath

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP0350	3x1,5	13,9	260
GP0351	4x1,5	14,8	300
GP0352	5x1,5	15,6	350
GP0353	3x2,5	14,7	310
GP0354	4x2,5	15,8	355
GP0355	5x2,5	16,6	425
GP0356	3x4	16,6	410
GP0357	4x4	17,9	480
GP0358	5x4	19,0	580
GP0359	3x6	17,7	490
GP0360	4x6	19,1	590
GP0361	5x6	20,3	720
GP0362	3x10*	20,1	560
GP0363	4x10*	21,9	660
GP0364	5x10*	23,3	820

* conductor made acc. to PN-EN 60228 class 2

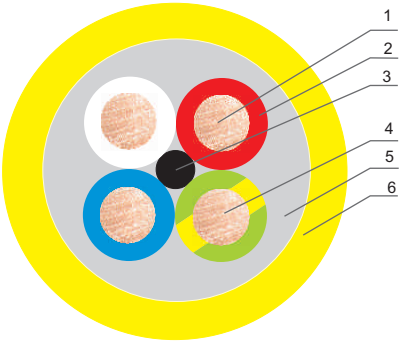
BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

YKGYyn-żo Mining power cable

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
1,5	12,1	0,34	0,107	19	0,17
2,5	7,41	0,32	0,099	27	0,29
4	4,61	0,32	0,100	37	0,46
6	3,08	0,30	0,095	47	0,69
10	1,83	0,28	0,089	62	1,15

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. PVC core
4. Protective conductor
5. Inner sheath
6. Outer sheath

YKGYFtZnyn

Mining power cable armoured with galvanised steel tape

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining power cable with PVC insulated copper conductors, PVC inner sheath, armoured with galvanised steel tape, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: special PVC
Conductor insulation colours: power conductors: natural, red, blue protective conductor: natural
Stranding element: twisted insulated power conductors with protective conductor components
Filling sheath: PVC or non-vulcanised rubber
Inner sheath: PVC
Armour: galvanised steel tape
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground mines, except for areas where explosion hazard exists, categorised as class “A” coal dust explosion hazard.
The cable can be installed in excavation sites with an inclination angle up to 45.

Sample cable marking:
YKGYFtZnyn 3x70/25 mm^2 - 4-conductor cable, nominal power conductor cross section: 70 mm^2, protective conductor cross section: 25 mm^2, voltage rating: 0,6/1kV.


mining applications


PN-EN 60332-1


PN-EN 60332-3
IEC 60332-3

non-flammable sheath

excavation sites with an inclination angle ≤45º

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP0500	3x10/6	23,8	1175
GP0501	3x16/16	26,3	1560
GP0502	3x25/16	30,4	2040
GP0503	3x35/16	32,4	2400
GP0504	3x50/16	35,7	3020
GP0505	3x70/25	41,0	4020
GP0506	3x95/25	46,4	5100
GP0507	3x120/35	51,6	6870

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

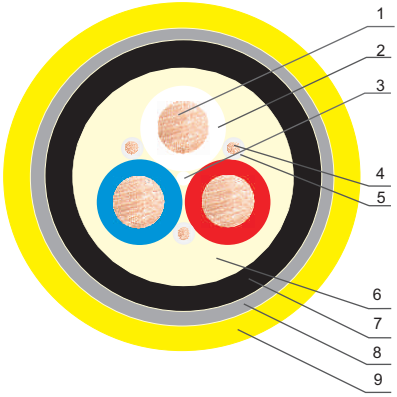
BITNER CABLE FACTORY

YKGYFtZnyn

Mining power cable armoured with galvanised steel tape

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,31	0,098	64	1,15
16	1,15	0,30	0,092	86	1,84
25	0,727	0,30	0,092	113	2,88
35	0,524	0,29	0,090	139	4,03
50	0,387	0,28	0,088	173	5,75
70	0,268	0,26	0,085	212	8,05
95	0,193	0,26	0,084	257	10,93
120	0,153	0,26	0,083	294	13,80

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. PVC core
4. Protective conductor component
5. Protective conductor insulation
6. Filling sheath
7. Inner sheath
8. Steel tape armouring
9. Outer sheath

YKGYFoyn

Mining power cable armoured with steel wires

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining power cable with PVC insulated copper conductors, PVC inner sheath, armoured with round steel wires, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C.
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: special PVC
Conductor insulation colours: power conductors: natural, red, blue protective conductor: natural
Stranding element: twisted insulated power conductors with protective conductor components
Filling sheath: PVC or non-vulcanised rubber
Inner sheath: PVC
Armour: round galvanised steel wires
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground mines, in methane-free seams, in areas where no explosion hazard exists, and in underground excavation sites categorised as class “A” coal dust explosion hazard.
The cable can be installed in shafts and excavation sites with an inclination angle up to 90.

Sample cable marking:
YKGYFoyn 3x70/25 mm^2 - 4-conductor cable, nominal power conductor cross section: 70 mm^2, protective conductor cross section: 25 mm^2, voltage rating: 0,6/1kV.


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

shaft cable

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP0600	3x10/6	25,9	1600
GP0601	3x16/16	28,4	2040
GP0602	3x25/16	32,6	2600
GP0604	3x35/16	34,3	2990
GP0605	3x50/16	37,9	3680
GP0606	3x70/25	43,2	4780
GP0607	3x95/25	48,6	5950
GP0603	3x120/35	52,9	7140

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

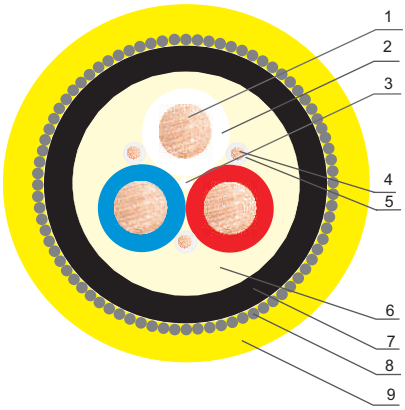
BITNER CABLE FACTORY

YKGYFoyn

Mining power cable armoured with steel wires

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,31	0,098	64	1,15
16	1,15	0,30	0,092	86	1,84
25	0,727	0,30	0,092	113	2,88
35	0,524	0,29	0,090	139	4,03
50	0,387	0,28	0,088	173	5,75
70	0,268	0,26	0,085	212	8,05
95	0,193	0,26	0,084	257	10,93
120	0,153	0,26	0,083	294	13,80

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. PVC core
4. Protective conductor component
5. Protective conductor insulation
6. Filling sheath
7. Inner sheath
8. Round steel wire armouring
9. Outer sheath

YKGYFoyn-żo

Mining power cable armoured with steel wires

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining power cable with PVC insulated copper conductors, PVC inner sheath, round steel wire armouring, PVC outer sheath with increased flame propagation resistance, with a green-yellow protective conductor

Operating temperature: -30°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: special PVC
Conductor colours:
3 conductor cables: natural, red, yellow-green
4 conductor cables: natural, red, blue, yellow-green
5 conductor cables: natural, red, blue, black, yellow-green
Stranding element: twisted power and protective conductors
Inner sheath: PVC
Armour: made of round galvanised steel wire braid.
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground mines, in methane-free areas, outside areas where explosion hazard exists, and in underground excavation sites categorised as class “A” coal dust explosion hazard.
The cable can be installed in excavation sites with an inclination angle up to 90.

Sample cable marking:
YKGYFoyn 4x70/2,5 mm^2 - 4-conductor cable, nominal power conductor cross section: 2,5 mm^2, protective conductor cross section: 2,5 mm^2, voltage rating: 0,6/1kV.


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

shaft cable

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP0700	3x1,5	15,9	460
GP0701	4x1,5	16,8	515
GP0702	5x1,5	17,6	565
GP0703	3x2,5	16,8	522
GP0704	4x2,5	17,8	590
GP0705	5x2,5	18,6	655
GP0706	3x4	18,7	660
GP0707	4x4	19,9	750
GP0708	5x4	22,1	1030
GP0709	3x6	19,7	760
GP0710	4x6	22,2	1070
GP0711	5x6	23,4	1200
GP0714	3x10*	23,2	1180
GP0715	4x10*	25,0	1380
GP0716	5x10*	26,5	1560

* conductor made acc. to PN-EN 60228 class 2

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

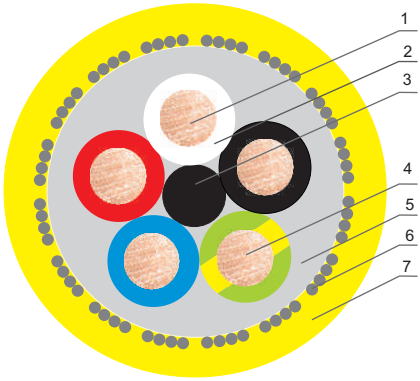
BITNER CABLE FACTORY

YKGYFoyn-żo

Mining power cable armoured with steel wires

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
1,5	12,1	0,37	0,118	20	0,17
2,5	7,41	0,35	0,109	28	0,29
4	4,61	0,35	0,110	38	0,46
6	3,08	0,33	0,105	48	0,69
10	1,83	0,31	0,098	64	1,15

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. PVC core
4. Protective conductor
5. Inner sheath
6. Round steel wire armouring
7. Outer sheath

YHKGYyn Screened mining power cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Screened mining power cable with PVC insulated copper conductors, individual conductor screening, PVC inner sheath, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C.
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: special PVC
Conductor colours: natural, red, blue
Individual conductor screen: copper tape
Core: copper wire
Stranding element: power conductors twisted around the core.
Inner sheath: PVC or non-vulcanised rubber
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground mines in areas with and without methane, in areas where there is a risk of explosion from:
- methane, in excavation sites categorised as class “a”, “b”, “c”
- coal dust, in excavation sites categorised as class “A”, “B” explosion hazard.

Sample cable marking:
YHKGYyn 3x50/16 mm^2 - 4-conductor cable, nominal power conductor cross section: 50 mm^2, protective conductor cross section: 16 mm^2, voltage rating: 0,6/1kV


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

for explosion hazardous areas

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP0800	3x10/6	23,0	880
GP0801	3x16/16	26,8	320
GP0802	3x25/16	29,9	1740
GP0803	3x35/16	32,8	2190
GP0804	3x50/16	37,9	2940
GP0805	3x70/25	41,7	3800
GP0806	3x95/25	46,4	4980
GP0807	3x120/35	50,9	5980
GP0808	3x150/50	57,5	7630
GP0809	3x185/50	61,9	9140

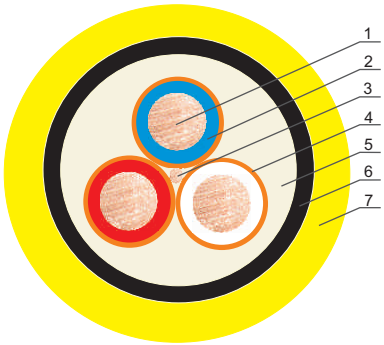
BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

YHKGYyn Screened mining power cable

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,31	0,098	67	1,15
16	1,15	0,30	0,094	87	1,84
25	0,727	0,28	0,089	116	2,88
35	0,524	0,28	0,087	140	4,03
50	0,387	0,27	0,083	170	5,75
70	0,268	0,25	0,080	211	8,05
95	0,193	0,25	0,079	259	10,93
120	0,153	0,24	0,077	299	13,8
150	0,124	0,24	0,076	340	17,25
185	0,0991	0,24	0,076	392	21,28

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. Core
4. Individual screen
5. Filling sheath
6. Inner sheath
7. Outer sheath

YHKGYekyn Double-screened mining power cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining power cable with PVC insulated conductors, individual conductor screening, PVC inner sheath, common screen, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: PVC
Conductor colours: natural, red, blue
Individual conductor screen: copper tape
Core: copper wire
Stranding element: power conductors twisted around the core
Filling sheath: PVC or non-vulcanised rubber
Inner sheath: PVC
Common screen: two copper tapes
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground excavation sites in areas where no explosion hazard exists, and in areas where there is a risk of explosion from:
- methane, in excavation sites categorised as class “a”, “b”, “c”
- coal dust, in excavation sites categorised as class “A”, “B” explosion hazard.

Sample cable marking:
YHKGYekyn 3x95/25 mm^2 - 4-conductor cable, nominal power conductor cross section: 95 mm^2, protective conductor cross section: 25 mm^2, voltage rating: 0,6/1kV


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

for explosion hazardous areas

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP1100	3x10/6	23,5	940
GP1110	3x16/16	27,4	1390
GP1102	3x25/16	30,5	1820
GP1103	3x35/16	33,3	2270
GP1104	3x50/16	38,4	3150
GP1105	3x70/25	42,3	4020
GP1106	3x95/25	46,9	5200
GP1107	3x120/35	51,4	6220
GP1108	3x150/50	58,0	7890
GP1109	3x185/50	62,4	9400

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

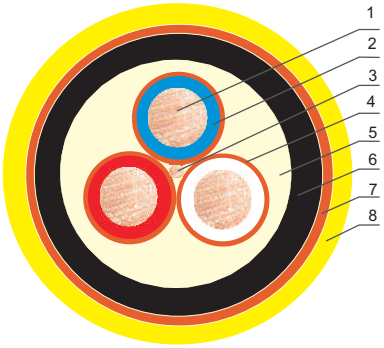
BITNER CABLE FACTORY

YHKGYekyn

Double-screened mining power cable

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,31	0,098	67	1,15
16	1,15	0,30	0,094	87	1,84
25	0,727	0,28	0,089	116	2,88
35	0,524	0,28	0,087	140	4,03
50	0,387	0,27	0,083	170	5,75
70	0,268	0,25	0,080	211	8,05
95	0,193	0,25	0,079	259	10,93
120	0,153	0,24	0,077	299	13,80
150	0,124	0,24	0,076	340	17,25
185	0,0991	0,24	0,076	392	21,28

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. Core
4. Individual screen
5. Filling sheath
6. Inner sheath
7. Common screen
8. Outer sheath

YHKGYFtZnyn

Screened mining power cable armoured with galvanised steel tape

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining power cable with PVC insulated copper conductors, individual conductor screening, PVC inner sheath, armoured with galvanised steel tape, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C.
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 and stranded class 2 acc. to PN-EN 60228
Insulation: special PVC
Conductor colours: natural, red, blue
Individual conductor screen: copper tape
Core: copper wire
Stranding element: power conductors twisted around the core
Inner sheath: PVC or non-vulcanised rubber
Armour: galvanised steel tape
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground mines, and underground mines in areas with and without methane, in areas where there is a risk of explosion from:
- methane, in excavation sites categorised as class “a”, “b”, “c”
- coal dust, in excavation sites categorised as class “A”, “B” explosion hazard.

The cable can be installed in excavation sites with an inclination angle up to 45.

Sample cable marking:
YHKGYFtZnyn 3x95/25 mm^2 - 4-conductor cable, nominal power conductor cross section: 95 mm^2, protective conductor cross section: 25 mm^2, voltage rating: 0,6/1kV


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

excavation sites with an inclination angle ≤45°

for explosion hazardous areas

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP1000	3x10/6	24,5	1080
GP1010	3x16/16	28,4	1560
GP1002	3x25/16	31,6	2010
GP1003	3x35/16	34,4	2490
GP1004	3x50/16	39,5	3280
GP1005	3x70/25	43,3	4180
GP1006	3x95/25	48,1	5670
GP1007	3x120/35	52,5	6730
GP1008	3x150/50	59,1	8490
GP1009	3x185/50	63,5	10070

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

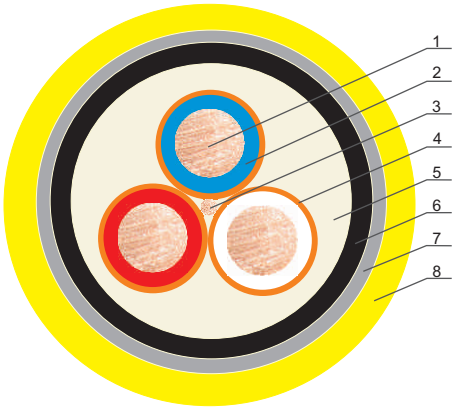
BITNER CABLE FACTORY

YHKGYFtZnyn

Screened mining power cable armoured with galvanised steel tape

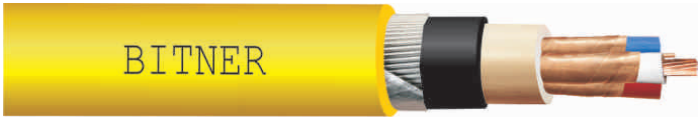
Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,34	0,108	68	1,15
16	1,15	0,33	0,103	88	1,84
25	0,727	0,31	0,098	117	2,88
35	0,524	0,31	0,096	142	4,03
50	0,387	0,30	0,091	172	5,75
70	0,268	0,28	0,088	213	8,05
95	0,193	0,27	0,087	261	10,93
120	0,153	0,26	0,085	301	13,80
150	0,124	0,26	0,084	342	17,25
185	0,0991	0,26	0,084	395	21,28

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. Core
4. Individual screen
5. Filling sheath
6. Inner sheath
7. Steel tape armouring
8. Outer sheath

YHKGYFoyn Screened and armoured mining power cable



RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining power cable with PVC insulated copper conductors, individual conductor screening, PVC inner sheath, armoured with round steel wires, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C.
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: special PVC
Conductor colours: natural, red, blue
Individual conductor screen: copper tape
Core: copper wire
Stranding element: power conductors twisted around the core
Filling sheath: PVC or non-vulcanised rubber
Inner sheath: PVC
Armour: round galvanized steel wires
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground mines, and underground mines in areas with and without methane, in areas where there is a risk of explosion from:
- methane, in excavation sites categorised as class “a”, “b”, “c”
- coal dust, in excavation sites categorised as class “A”, “B” explosion hazard.
The cable can be installed in shafts and excavation sites with an inclination angle up to 90.

Sample cable marking:
YHKGYFoyn 3x95/25 mm^2 - 4-conductor cable, nominal power conductor cross section: 95 mm^2, protective conductor cross section: 25 mm^2, voltage rating: 0,6/1kV


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

shaft cable

for explosion hazardous areas

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP1050	3x10/6	28,8	2050
GP1051	3x16/16	33,0	2880
GP1052	3x25/16	37,2	3590
GP1053	3x35/16	38,9	4040
GP1054	3x50/16	42,5	4850
GP1055	3x70/25	49,6	6780
GP1056	3x95/25	55,0	8230
GP1057	3x120/35	64,6	11280

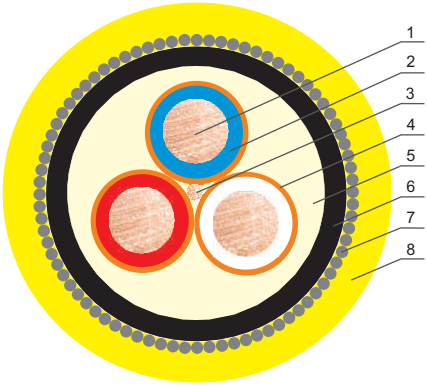
BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

YHKGYFoyn Screened and armoured mining power cable

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,34	0,108	68	1,15
16	1,15	0,33	0,103	88	1,84
25	0,727	0,31	0,098	117	2,88
35	0,524	0,31	0,096	142	4,03
50	0,387	0,30	0,091	172	5,75
70	0,268	0,28	0,088	213	8,05
95	0,193	0,27	0,087	261	10,93
120	0,153	0,26	0,085	301	13,80

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. Core
4. Individual screen
5. Filling sheath
6. Inner sheath
7. Round steel wire armouring
8. Outer sheath

YHKGXSyn

XLPE insulated screened mining power cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining power cable with XLPE insulated copper conductors, individual conductor screening, PVC inner sheath, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C
Maximum conductor operating temperature: 90°C
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: XPLE cross-linked polyethylene
Conductor colours: three white or natural conductors
Individual conductor screen: copper tape
Core: copper wire
Stranding element: power conductors twisted around the core.
Inner sheath: PVC or non-vulcanised rubber
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip, open-pit and underground mines in areas with and without methane, in areas where there is a risk of explosion from:
- methane, in excavation sites categorised as class “a”, “b”, “c”
- coal dust, in excavation sites categorised as class “A”, “B” explosion hazard.

Sample cable marking:
YHKGXSyn 3x50/16 mm^2 - 4-conductor cable, nominal power conductor cross section: 50 mm^2, protective conductor cross section: 16 mm^2, voltage rating: 0.6/1kV

mining applications

PN-EN 60332-1

PN-EN 60332-3
IEC 60332-3

>29
non-flammable sheath

a b c
A B
for explosion hazardous areas

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP1210	3x10/10	24,6	960
GP1201	3x16/10	27,2	1260
GP1202	3x25/16	30,6	1730
GP1203	3x35/16	33,4	2180
GP1204	3x50/16	38,0	2870
GP1205	3x70/25	41,2	3630
GP1206	3x95/25	46,6	4880
GP1207	3x120/35	51,6	6000
GP1208	3x150/50	57,6	7490
GP1209	3x185/50	62,7	9150

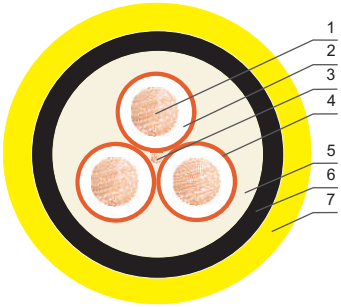
BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

YHKGXSyn

XLPE insulated screened mining power cable

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,31	0,098	81	1,43
16	1,15	0,30	0,094	106	2,29
25	0,727	0,28	0,089	140	3,58
35	0,524	0,28	0,087	168	5,01
50	0,387	0,27	0,083	201	7,15
70	0,268	0,25	0,080	253	10,01
95	0,193	0,25	0,079	315	13,59
120	0,153	0,24	0,077	357	17,16
150	0,124	0,24	0,076	407	21,45
185	0,0991	0,24	0,076	467	26,46

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. Core
4. Individual screen
5. Filling sheath
6. Inner sheath
7. Outer sheath

YHKGXSekyn Double-screened mining power cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining power cable with copper conductors in XLPE cross-linked polyethylene, individual conductor screening, PVC inner sheath with common screen on the stranding element, PVC outer sheath with increased flame propagation resistance
Temperature range:
Operating temperature: -30°C to 70°C
Maximum conductor operating temperature: 90°C
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 and stranded class 2 acc. to PN-EN 60228
Insulation: cross-linked polyethylene
Conductor colours: three white or natural conductors
Individual conductor screen: metallic: copper tape
Core: copper wire
Stranding element: power conductors twisted around the core
Filling sheath: PVC or non-vulcanised rubber
Inner sheath: special PVC
Common screen: two copper tapes
Outer sheath: special, non-flammable PVC, preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground excavation sites, in areas where there is a risk of explosion from:
- methane, in excavation sites categorised as class “a”, “b”, “c”
- coal dust, in excavation sites categorised as class “A”, “B” explosion hazard.

Sample cable marking:
YHKGXSekyn 3x50/16 mm^2 - 4-conductor cable, nominal power conductor cross section: 50 mm^2, protective conductor cross section: 16 mm^2, voltage rating: 0,6/1kV


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

for explosion hazardous areas

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP1510	3x10/10	23,5	1070
GP1501	3x16/10	27,4	1390
GP1502	3x25/16	30,5	1812
GP1503	3x35/16	33,3	2266
GP1504	3x50/16	38,4	3135
GP1505	3x70/25	42,3	4015
GP1506	3x95/25	46,9	5196
GP1507	3x120/35	51,4	6207
GP1508	3x150/50	58,0	7884
GP1509	3x185/50	62,4	9396

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

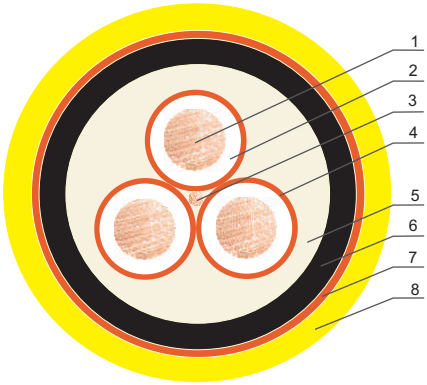
BITNER CABLE FACTORY

YHKGXSekyn

Double-screened mining power cable

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,31	0,098	81	1,43
16	1,15	0,30	0,094	106	2,29
25	0,727	0,28	0,089	140	3,58
35	0,524	0,28	0,087	168	5,01
50	0,387	0,27	0,083	201	7,15
70	0,268	0,25	0,080	253	10,01
95	0,193	0,25	0,079	315	13,59
120	0,153	0,24	0,077	357	17,16
150	0,124	0,24	0,076	407	21,45
185	0,0991	0,24	0,076	467	26,46

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. Core
4. Individual screen
5. Filling sheath
6. Inner sheath
7. Common screen
8. Outer sheath

YHKGXSFtZnyn

Screened mining power cable with XLPE insulation, armoured with galvanised steel tape

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining power cable with XLPE insulated and copper conductors, with individual screening, PVC inner sheath, galvanised steel tape armouring, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C
Maximum conductor operating temperature: 90°C
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: XPLE cross-linked polyethylene
Conductor colours: three white or natural conductors
Individual conductor screen: copper tape
Core: copper wire or line
Stranding element: power conductors twisted around the core
Inner sheath: PVC or non-vulcanised rubber
Armour: galvanised steel tape
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground mines, in areas with and without methane, in areas where there is a risk of explosion from:
- methane, in excavation sites categorised as class “a”, “b”, “c”
- coal dust, in excavation sites categorised as class “A”, “B” explosion hazard.

The cable can be installed in excavation sites with an inclination angle up to 45.

Sample cable marking:
YHKGXSFtZnyn 3x50/16 mm^2 - 4-conductor cable, nominal power conductor cross section: 50 mm^2, protective conductor cross section: 16 mm^2, voltage rating: 0,6/1kV


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

excavation sites with an inclination angle ≤45°

for explosion hazardous areas

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP1410	3x10/10	26,1	1170
GP1411	3x16/10	28,4	1470
GP1402	3x25/16	32,7	2040
GP1403	3x35/16	35,6	2530
GP1404	3x50/16	40,6	3300
GP1405	3x70/25	43,9	4100
GP1406	3x95/25	49,2	5680
GP1407	3x120/35	54,3	6880
GP1408	3x150/50	60,2	8470
GP1409	3x185/50	65,3	10200

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

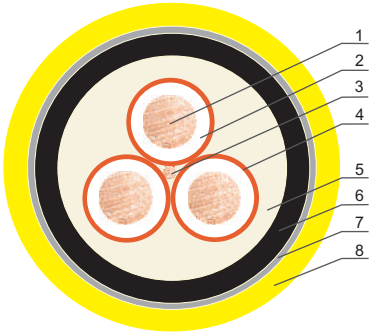
BITNER CABLE FACTORY

YHKGXSFtZnyn

Screened mining power cable with XLPE insulation, armoured with galvanised steel tape

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,34	0,108	82	1,43
16	1,15	0,33	0,103	108	2,29
25	0,727	0,31	0,098	141	3,58
35	0,524	0,31	0,096	170	5,01
50	0,387	0,30	0,091	203	7,15
70	0,268	0,28	0,088	255	10,01
95	0,193	0,27	0,087	317	13,59
120	0,153	0,26	0,085	359	17,16
150	0,124	0,26	0,084	409	21,45
185	0,0991	0,26	0,084	470	26,46

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. Core
4. Individual screen
5. Filling sheath
6. Inner sheath
7. Steel tape armouring
8. Outer sheath

YHKGXSFoyn Armoured mining power cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining power cable with copper conductors in cross-linked polyethylene insulation, with individual conductor screening, PVC inner sheath, round steel wire armouring, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C
Maximum conductor operating temperature: 90°C
Minimum installation temperature: -5°C
Operating voltage: 0,6/1 kV
Test voltage: 3,5 kV
Min. bending radius: 12 x Ø

Construction:

Conductors: copper, solid class 1 or stranded class 2 acc. to PN-EN 60228
Insulation: XPLE cross-linked polyethylene
Conductor colour: three white or natural conductors
Individual conductor screen: copper tape
Core: copper wire
Stranding element: power conductors twisted around core
Filling sheath: special PVC or non-vulcanised rubber
Inner sheath: special PVC
Armour: round steel wires
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. to PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cables for supplying electrical equipment operating in strip and open-pit mines and underground mines, in areas with and without methane, in areas where there is a risk of explosion from:
- methane, in excavation sites categorised as class “a”, “b”, “c”
- coal dust, in excavation sites categorised as class “A”, “B” explosion hazard. The cable can be installed in shafts and excavation sites with an inclination angle up to 90.

Sample cable marking:
YHKGXSFoyn 3x50/16 mm^2 - 4-conductor cable, nominal power conductor cross section: 50 mm^2, protective conductor section: 16 mm^2, voltage rating: 0,6/1kV


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

shaft cable

for explosion hazardous areas

Cat. no.	Conductors/ cross section [nxmm^2]	Max. outer diameter [mm]	Calculated cable weight [kg/km]
GP1450	3x10/10	33,7	3343
GP1451	3x16/10	36,2	3859
GP1452	3x25/16	40,3	4685
GP1453	3x35/16	42,0	5292
GP1454	3x50/16	47,8	6888
GP1455	3x70/25	52,7	8257
GP1456	3x95/25	60,8	11082
GP1457	3x120/35	65,1	13412
GP1458	3x150/50	69,7	15252
GP1459	3x185/50	75,8	18562

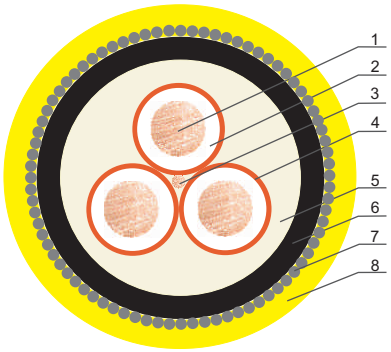
BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

YHKGXSFoyn Armoured mining power cable

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]	Short circuit capacity* [kA]
10	1,83	0,34	0,108	82	1,43
16	1,15	0,33	0,103	108	2,29
25	0,727	0,31	0,098	141	3,58
35	0,524	0,31	0,096	170	5,01
50	0,387	0,30	0,091	203	7,15
70	0,268	0,28	0,088	255	10.01
95	0,193	0,27	0,087	317	13,59
120	0,153	0,26	0,085	359	17,16
150	0,124	0,26	0,084	409	21,45
185	0,0991	0,26	0,084	470	26,46

* 1 second short circuit capacity calculated assuming that the temperature of power conductors during the short circuit equals the max. long-term temperature.



1. Power conductor
2. Insulation
3. Core
4. Individual screen
5. Filling sheath
6. Inner sheath
7. Round steel wire armouring
8. Outer sheath

Correction factors
for 0,6/1 kV mining power cables

Kt correction factor for cables with copper, **PVC insulated** conductors, voltage rating 0,6/1kV
for ambient temperatures above 25°C

Ambient temperature [°C]	Kt correction factor
30	0,94
35	0,88
40	0,82
45	0,75
50	0,67
55	0,58

Kt correction factor for cables with copper, **XLPE insulated** conductors, voltage rating 0,6/1kV
for ambient temperatures above 25°C

Ambient temperature [°C]	Kt correction factor
30	0,96
35	0,92
40	0,88
45	0,83
50	0,78
55	0,73

For cables installed in parallel stacks (one above the other) on brackets, the long-term current carrying capacity values for individual cables should be multiplied by the Kg correction factor as given in the table.
The Kg factor values given in the table are valid for cables installed at least at a 2 cm distance from walls. The distance between cables is at least equal to their diameter.
Application of the Kg factor is not required for distances greater than 15 cm between cables.

Number of cables installed vertically	Kt correction factor
2	0,93
3	0,90
6	0,87
9	0,86

CHAPTER II

RUBBER SHEATHED MINING POWER CABLES VOLTAGE RATING UP TO 0,6/1 KV

OnG single-conductor

Rubber insulated and sheathed single-conductor mining power cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Sheathed mining cable, with cooper conductors in normal rubber insulation and oil-resistant rubber sheath, resistant to flame propagation
Max. operating temperature: 60°C
Operating voltage: 0,6/1 kV
Test voltage: 3,2 kV
Min. bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices

Construction:

Conductors: cooper, tin-plated, multi-stranded class 5 acc. PN-EN 60228
Insulation: special IZ rubber insulation acc. PN-89/E-29100
Conductor colours: natural
Outer sheath: special ON3 or ON4 rubber acc. PN-89/E-29100, non-flammable, oxygen index > 29
Sheath colour: black

Application:

The OnG single-conductor cable is designed for use as power supply, amplification and return conductors in underground mining contact lines, for supplying mining induction lamps, and for connecting lamps in cuts with contact wire of the contact line.

Sample cable marking:
OnG 1 x70mm^2 0,6/1kV – 1-conductor cable, conductor cross section: 70 mm^2, voltage rating: 0,6/1kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Conductor nominal cross section [mm^2]	max. outer diameter [mm]	calculated cable weight [kg/km]	Max. conductor resistance at 20°C [Ω/km]
GG1001	4	11,8	160	5,09
GG1014	6	12,5	190	3,39
GG1002	10	15,1	270	1,95
GG1015	16	16,1	350	1,24
GG1016	25	19,7	500	0,795
GG1003	35	20,9	640	0,565
GG1004	50	23,4	850	0,393
GG1005	70	26,0	1080	0,277
GG1017	95	30,2	1450	0,210
GG1013	120	31,9	1800	0,164
GG1018	150	34,4	2100	0,132
GG1019	185	37,3	2500	0,108

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

OnG multi-conductor

Rubber insulated and sheathed multi-conductor mining power cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Sheathed mining cable, with cooper conductors in normal rubber insulation and oil-resistant rubber sheath, resistant to flame propagation

Max. operating temperature: 60°C
Operating voltage: 0,6/1 kV
Test voltage:
power conductors: 3,2 kV
control conductors: 2 kV
Min. bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Construction:

Conductors: cooper, tin-plated, multi-stranded class 5 acc. PN-EN 60228
Insulation: special IZ rubber insulation acc. PN-89/E-29100
Conductor colours:
4-conductor cables:
power conductors: green, red, natural
protective conductor: black corrugated
5-conductor cables:
power conductors: green, red, natural
protective conductor: black corrugated
control conductor: brown
Liner: special insulation rubber acc. PN-89/E-29100
Stranding element:
4-conductor cables: 3 power and 1 protective conductor twisted around rubber liner
5-conductor cables: 3 power and 1 control conductor twisted around rubber liner, with the protective conductor as a core
Outer sheath: special ON3 or ON4 rubber acc. PN-89/E-29100, non-flammable, resistant to flame propagation, oxygen index >29
Sheath colour: black

Application:

Special cable for supplying portable and mobile devices installed in underground and strip mines, out of areas exposed to the risk of methane and coal dust explosion.

Sample cable marking:
OnG 3x2,5+2,5+2,5 mm^2 0.6/1kV – 5-conductor cable, nominal power conductor cross section: 2,5 mm^2, protective and control conductor: 2,5 mm^2, voltage rating: 0,6/1kV

Cat. no.	Number and conductor cross section	Total conductors	Number of conductors			Nominal conductor cross section			Max. outer diameter	Calculated cable weight
			power	protective	control	power	protective	control		
	[nxmm^2]	[n]	[n]	[n]	[n]	[mm^2]	[mm^2]	[mm^2]	[mm]	[kg/km]
GP1006	3x2,5+2,5	4	3	1	-	2,5	2,5	-	19,6	450
GP1008	3x4+4					4	4	-	21,9	620
GP1010	3x6+6					6	6	-	25,8	850
GP1011	3x10+10					10	10	-	30,5	1250
GP1007	3x2,5+2,5+2,5	5	3	1	1	2,5	2,5	2,5	21,1	510
GP1009	3x4+4+4					4	4	4	25	720

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Power conductor cross section	Max. conductor resistance at 20°C	Unit inductive reactance	Unit inductivity	Current carrying capacity AC or DC at <25°C
[mm^2]	[Ω/km]	[Ω/km]	[mH/km]	[A]
2,5	8,21	0,123	0,39	31
4	5,09	0,116	0,37	42
6	3,39	0,107	0,34	54
10	1,95	0,107	0,34	75

BITNER CABLE FACTORY

OnG1

Rubber insulated and sheathed multi-conductor non-screened mining power cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Sheathed mining cable, with cooper conductors in normal rubber insulation and oil-resistant rubber sheath, resistant to flame propagation, with conductors twisted in a stranding element with liners or core (1)

Max. operating temperature: 60°C
Operating voltage: 0,6/1 kV
Test voltage:
power conductors: 3,2 kV
control conductors: 2,0 kV
Minimum bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Construction:

Conductors: cooper, tin-plated, multi-stranded class 5 acc. PN-EN 60228
Insulation: special IZ rubber insulation acc. PN-89/E-29100
Conductor colours:
2-conductor cables: power conductors: red, natural
4-conductor cables: power conductors: green, red, natural
protective conductor: black corrugated
5-conductor cables: power conductors: green, red, natural
protective conductor: black corrugated
control conductor: brown.
Stranding element:
2-conductor cables: 2 power conductors and two liners twisted together
4-conductor cables: 3 power and 1 protective conductor twisted on a core
5-conductor cables: 3 power, 1 protective and 1 control conductor twisted on a rubber core
Core or liners: special rubber acc. PN-89/E-29100
Outer sheath: special ON3 or ON4 rubber acc. PN-89/E-29100, non-flammable, resistant to flame propagation, oxygen index > 29
Sheath colour: black

Application:

Cable for supplying portable and mobile devices installed in underground, open-pit or strip mines, out of areas exposed to the risk of methane and coal dust explosion.

Sample cable marking:
OnG1 3x1,5+1,5 mm^2 0,6/1kV -
4-conductor cable, nominal power conductor cross section: 1,5 mm^2, protective conductor: 1,5 mm^2, voltage rating: 0,6/1kV

Cat. no.	Number and conductor cross section	Total conductors	Number of conductors			Nominal conductor cross section			Max. outer diameter	Calculated cable weight
			power	protective	control	power	protective	control		
	[nxmm^2]	[n]	[n]	[n]	[n]	[mm^2]	[mm^2]	[mm^2]	[mm]	[kg/km]
GP1301	2x1,5	2	2	-	-	1,5	-	-	14,1	220
GP1302	2x2,5					2,5	-	-	15,0	240
GP1300	3x1,5+1,5	4	3	1	-	1,5	1,5	-	15,0	270
GP1304	3x2,5+2,5+2,5	5	3	1	1	2,5	2,5	2,5	19,9	570
GP1305	3x4+4+4					4	4	4	22,3	670
GP1306	3x6+6+4					6	6	4	26,4	920

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Power conductor cross section	Max. conductor resistance at 20°C	Unit reactance	Unit inductivity	Current carrying capacity AC or DC at <25°C
[mm^2]	[Ω/km]	[Ω/km]	[mH/km]	[A]
1,5	13,7	-	-	23
2,5	8,21	0,123	0,39	31
4	5,09	0,116	0,37	42
6	3,39	0,107	0,34	54

BITNER CABLE FACTORY

OnGc-G

Rubber insulated and sheathed multi-conductor non-screened mining cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Sheathed mining cable, with cooper conductors in heat-resistant rubber insulation and oil-resistant rubber sheath, resistant to flame propagation
Max. operating temperature: 90°C
Operating voltage: 0,6/1 kV
Test voltage:
power conductors: 3,2 kV
control conductors: 2 kV
Min. bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices

Construction:

Conductors: cooper, tin-plated, multi-stranded class 5 acc. PN-EN 60228
Power and control conductor insulation: special heat-resistant insulation rubber acc. PN-89/E-29100
Protective conductor insulation: special GP conducting rubber acc. PN-89/E-29100
Conductor colours:
4-conductor cables:
power conductors: green, red, natural
protective conductor: black corrugated
5-conductor cables:
power conductors: green, red, natural;
protective conductor: black corrugated
control conductor: brown
7-conductor cables:
power conductors: green, red, natural;
protective conductor: black corrugated
control conductors: green, red, natural
Control conductor sheath (7 x): special IEP heat-resistant insulation rubber acc. PN-89/E-29100
Liners: IZ or IEP rubber acc. PN-E-29100:1989
Stranding element:
4-conductor cables: insulated power conductors with three protective conductor components and liners in the gaps between conductors, twisted around a central liner
5-conductor cables: insulated power conductors and control conductor with three protective conductor components, in the gaps between conductors, twisted around a central liner
7-conductor cables: insulated power conductors and a stranding element of control conductors, with four protective conductor components, in the gaps between conductors, twisted around a central liner
Lapping: conductive tape
Outer sheath: ON4 rubber acc. PN-89/E-29100, non-flammable, oxygen index > 29
Sheath colour: black or acc. to client's specification

Application:

Cable for supplying portable and mobile devices installed in underground, open-pit or strip mines, out of areas exposed to the risk of methane and coal dust explosion.

Sample cable marking:
OnGc-G 3x16 + 4x10/4+16 mm^2 0,6/1kV – 5-conductor cable, nominal power conductor cross section: 16 mm^2, protective conductor: 10mm^2, control conductor: 16 mm^2, voltage rating: 0,6/1kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

BITNER CABLE FACTORY

OnGc-G Rubber insulated and sheathed multi-conductor non-screened mining cable

Cat. no.	Number and conductor cross section [nxmm^2]	Total conductors [n]	Number of conductors			Nominal conductor cross section			Max. outer diameter [mm]	Calculated cable weight [kg/km]
			power [n]	protective [n]	control [n]	power [mm^2]	protective [mm^2]	control [mm^2]		
GP1052	3x16+3x10/3	4		1	-	16	10	-	27,5	1160
GP1055	3x25+3x16/3					25	16	-	32,0	1670
GP1058	3x35+3x16/3					35	16	-	36,2	2180
GP1061	3x50+3x25/3					50	25	-	41,5	2990
GP1065	3x70+3x25/3					70	25	-	45,5	3815
GP1067	3x95+3x35/3					95	35	-	51,8	4900
GP1069	3x120+3x35/3					120	35	-	58,8	6050
GP1050	3x6+4x6/4+6	5	3	1	1	6	6	6	24,5	790
GP1051	3x10+4x10/4+10					10	10	10	28,5	1140
GP1054	3x16+4x10/4+16					16	10	16	29,5	1325
GP1057	3x25+4x16/4+25					25	16	25	34,5	1970
GP1060	3x35+4x16/4+35					35	16	35	39,3	2580
GP1064	3x50+4x25/4+50					50	25	50	45,2	3560
GP1053	3x16+4x10/4+3x2,5	7	3	1	3	16	10	2,5	29,5	1260
GP1056	3x25+4x16/4+3x2,5					25	16	2,5	34,8	1760
GP1059	3x35+4x16/4+3x2,5					35	16	2,5	39,3	2260
GP1063	3x50+4x25/4+3x4					50	25	4	45,2	3250
GP1066	3x70+4x25/4+3x4					70	25	4	49,6	3960
GP1068	3x95+4x35/4+3x4					95	35	4	56,6	5380
GP1070	3x120+4x35/4+3x4					120	35	4	64,4	6660

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Power conductor cross section [mm^2]	Power conductor resistance at 25°C [Ω/km]	Current carrying capacity AC or DC at <25°C [A]	Unit inductivity [mH/km]	Unit inductive reactance [Ω/km]
6	3,39	64	0,35	0,11
10	1,91	90	0,33	0,104
16	1,21	118	0,31	0,097
25	0,78	152	0,30	0,094
35	0,554	187	0,29	0,091
50	0,386	233	0,29	0,091
70	0,272	288	0,28	0,088
95	0,206	345	0,28	0,088
120	0,161	400	0,27	0,088

OnGcekż-G

Rubbe insulated and sheathed multi - conductor screened mining cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining cable, with cooper conductors in heat-resistant rubber insulation and oil-resistant rubber sheath, resistant to flame propagation

Max. operating temperature: 90°C
Operating voltage: 0,6/1 kV
Test voltage:
power conductors: 3,2 kV
control conductors: 2 kV
Max. control conductor resistance:
For 2,5 mm^2 – 8,21 Ω/km
For 4 mm^2 – 5,09 Ω/km
Min. bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices

Construction:

Power, protective, control conductors: cooper, tin-plated, multi-stranded class 5 acc. PN-EN 60228
Separator: polyester film on power conductors
Power and control conductor insulation: special heat-resistant rubber insulation acc. PN-89/E-29100
Conductor colours:
7-conductor cables:
power conductors: natural, red, blue
control conductors: natural, red, blue
10-conductor cables:
power conductors: natural, red, blue
control conductors: 2 x blue, 2 x natural, 2 x red
Screen on power and control conductor sheath: lapping of conducting tape or braid of tin-plated cooper wires, diameter at least 0,3 mm and synthetic thread of min. covering capacity 30 %
Control conductor sheath: special IZ or IEP rubber acc. PN-89/E-29100
Liners: vulcanised rubber
Outer sheath: special ON4 rubber acc. PN-89/E-29100, non-flammable, oxygen index > 29
Sheath colour: black

Application:

Cable suitable for supplying portable and mobile devices operating in underground in mines, in methane and non-methane areas, and excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B” coal dust explosion hazard. For direct contact with water and high humidity, use OnGcekż –GW cables.

Sample cable marking:
OnGcekż -G 3x70 + 35 + 6x4 mm^2 0,6/1kV – 10-conductor cable, nominal power conductor cross section: 70 mm^2, protective conductor: 35mm^2, control conductor: 4 mm^2, voltage rating: 0,6/1kV


mining applications


high flexibility

non-flammable sheath

for potentially explosive areas


oil-resistant

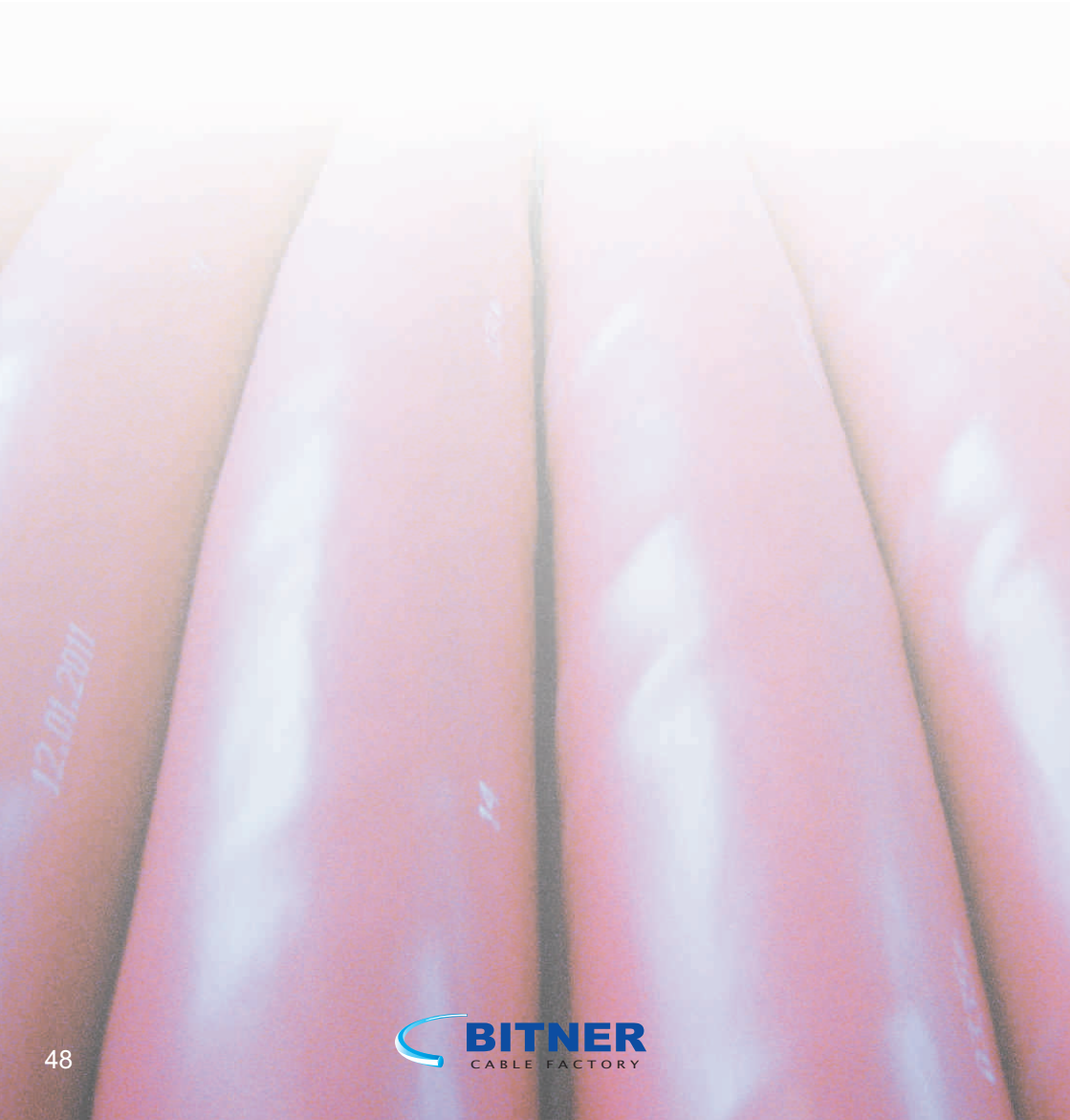

UV resistant

Cat. no.	Number and conductor cross section [nxmm^2]	Total conductors [n]	Number of conductors			Nominal conductor cross section			Max. outer diameter [mm]	Calculated cable weight [kg/km]
			power [n]	protective [n]	control [n]	power [mm^2]	protective [mm^2]	control [mm^2]		
GG1100	3x25+16+3x2,5	7	3	1	3	25	16	2,5	43,0	2400
GG1102	3x35+16+3x2,5					35	16	2,5	46,0	3100
GG1105	3x50+25+3x4					50	25	4	51,8	3900
GG1106	3x70+35+3x4					70	35	4	58,8	5000
GG1103	3x35+16+6x2,5	10	3	1	6	35	16	2,5	46,0	3200
GG1104	3x50+25+6x2,5					50	25	2,5	51,8	4000
GG1107	3x70+35+6x2,5					70	35	2,5	56,8	5000
GG1108	3x70+35+6x4					70	35	4	56,8	5200
GG1109	3x95+35+6x4					95	35	4	64,0	6600

OnGcekż-G

Rubbe insulated and sheathed multi - conductor screened mining cable

Conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]
16	1,24	0,31	0,097	118
25	0,795	0,30	0,094	152
35	0,565	0,29	0,091	187
50	0,393	0,29	0,091	233
70	0,277	0,28	0,088	288
95	0,210	0,28	0,088	345



BITNER CABLE FACTORY

OnGcekż-GW

Sealed rubber insulated and sheathed multi-conductor screened mining cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining cable with cooper conductors in heat-resistant rubber insulation and oil-resistant rubber sheath, resistant to flame propagation, screened conductors and longitudinal seal

Max. operating temperature: 90°C

Operating voltage: 0,6/1 kV

Test voltage:
power conductors: 3,2 kV
control conductors: 2 kV

Max. control conductor resistance:
For 2,5 mm^2 – 8,21 Ω/km
For 4 mm^2 – 5,09 Ω/km

Min. bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices

Construction:

Power, protective, control conductors: cooper, tin-plated, multi-stranded class 5 acc. PN-EN 60228

Separator: polyester film on power conductors

Power and control conductor insulation: special heat-resistant insulation rubber acc. PN-89/E-29100

Conductor colours:
7-conductor cables:
power conductors: natural, red, blue
control conductors: natural, red, blue
10-conductor cables:
power conductors: natural, red, blue
control conductors: 2 x blue,
2 x natural, 2 x red

Screen on power and control conductor sheath: conductive tape lapping and tin-plated cooper wire braid, diameter at least 0,3 mm and synthetic thread of min. covering capacity 30 %
Control conductor sheath: special IZ or IEP rubber acc. PN-89/E-29100

Liners: vulcanised rubber

Longitudinal seal: tape swelling when moistened

Outer sheath: special ON4 rubber acc. PN-89/E-29100, non-flammable, oxygen index > 29

Sheath colour: black

Application:

Cable suitable for supplying portable and mobile devices operating in underground in mines, in methane and non-methane areas, and excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B” coal dust explosion hazard. Cable suitable for use in direct contact with water and high humidity.

Sample cable marking:
OnGcekż -GW 3x70 + 35 + 6x4 mm^2 0,6/1kV – 10-conductor cable, nominal power conductor cross section of: 70 mm^2, protective conductor: 35mm^2, control conductor: 4 mm^2, voltage rating: 0,6/1kV


mining applications


high flexibility

non-flammable sheath

for potentially explosive areas


oil-resistant


UV resistant

Cat. no.	Number and conductor cross section [nxmm^2]	Total conductors [n]	Number of conductors			Nominal conductor cross section			Max. outer diameter [mm]	Calculated cable weight [kg/km]
			power [n]	protective [n]	control [n]	power [mm^2]	protective [mm^2]	control [mm^2]		
GG1800	3x25+16+3x2,5	7	3	1	3	25	16	2,5	43,0	2400
GG1801	3x35+16+3x2,5					35	16	2,5	46,0	3100
GG1802	3x50+25+3x4					50	25	4	51,8	3900
GG1803	3x70+35+3x4					70	35	4	58,8	5000
GG1804	3x35+16+6x2,5	10	3	1	6	35	16	2,5	46,0	3200
GG1805	3x50+25+6x2,5					50	25	2,5	51,8	4000
GG1806	3x70+35+6x2,5					70	35	2,5	56,8	5000
GG1807	3x70+35+6x4					70	35	4	56,8	5200
GG1808	3x95+35+6x4					95	35	4	64,0	6600

BITNER Cable Factory reserves the right to modify specifications without prior notification.

OnGcekż-GW

Sealed rubber insulated and sheathed multi-conductor screened mining cable

Conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Inductive reactance [Ω/km]	Long-term current carrying capacity [A]
16	1,24	0,31	0,097	118
25	0,795	0,30	0,094	152
35	0,565	0,29	0,091	187
50	0,393	0,29	0,091	233
70	0,277	0,28	0,088	288
95	0,210	0,28	0,088	345

OnGcekż-G2

Rubber insulated and sheathed multi-conductor screened mining cable with two conductor strands

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining cable with two strands of screened cooper conductors in heat-resistant rubber insulation and oil-resistant rubber sheath, resistant to flame propagation
Max. operating temperature: 90°C
Operating voltage: 0,6/1 kV
Test voltage:
power conductors: 3,2 kV
control conductors: 2 kV
Max. control conductor resistance:
For 2,5 mm^2 – 8,21 Ω/km
For 4 mm^2 – 5,09 Ω/km
Min. bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices

Construction:

Power and control conductors: cooper or cooper tin-plated, multi-stranded class 5 acc. PN-EN 60228
Protective conductor: cooper wire braid and synthetic thread on the control conductor sheath and power conductors
Separator: polyester film on power conductors
Power and control conductor insulation:
IEP heat-resistant insulation rubber acc. PN-89/E-29100
Conductor colours: as per table
Insulated power conductor lapping: polyester film
Screen on power and control conductor sheath:
tin-plated cooper wire braid, diameter at least 0,3 mm and synthetic thread of min. covering capacity 65 %
Control conductor sheath: IZ or IEP rubber acc. PN-89/E-29100
Core: IZ or IEP rubber acc. PN-89/E-29100
Outer sheath: special ON4 rubber acc. PN-89/E-29100, non-flammable, oxygen index > 29
Sheath colour: black

Application:

Cable suitable for supplying portable and mobile devices operating in underground in mines, in methane and non-methane areas, and excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B” coal dust explosion hazard.

Sample cable marking:
OnGcekż - G2 3x70 + 3 x35 + 25 + 6x2,5 mm^2 0,6/1kV – 13-conductor cable, nominal power conductor I cross section: 1 - 70 mm^2, power conductor II: 35 mm^2, protective conductor: 25 mm^2, control conductor: 2,5 mm^2, voltage rating 0,6/1kV


mining applications


high flexibility

non-flammable sheath

for potentially explosive areas


oil-resistant


UV resistant

Total conductors	Colour of conductor insulation or rubber covered tape lapping	
	power	control
10	green green red red natural natural	green red natural
13	green green red red natural natural	green green red red natural natural
14	green green red red natural natural	green green red red natural natural blue

OnGcekż-G2

Rubber insulated and sheathed multi-conductor screened mining cable with two conductor strands

Cat. no.	Number and conductor cross section [nxmm^2]	Total conductors [n]	Conductor nominal cross section				Max. outer diameter [mm]	Calculated cable weight [kg/km]	Max. conductor resistance at 20°C	
			power I [mm^2]	power II [mm^2]	protective [mm^2]	control [mm^2]			I [Ω/km]	II [Ω/km]
GG1400	3x35+3x25+25+3x4	10	35	25	25	4	57,8	4850	0,554	0,780
GG1401	6x35+25+3x4		35	35	25	4	57,8	5150	0,554	0,554
GG1402	3x50+3x25+25+3x4		50	25	25	4	57,8	5500	0,386	0,780
GG1403	3x50+3x35+25+3x4		50	35	25	4	57,8	5700	0,386	0,554
GG1404	6x50+25+3x4		50	50	25	4	65	5900	0,386	0,386
GG1405	3x70+3x25+25+3x4		70	25	25	4	65	6750	0,272	0,780
GG1406	3x70+3x35+25+3x4		70	35	25	4	65	7000	0,272	0,554
GG1407	3x70+3x50+25+3x4		70	50	25	4	65	7300	0,272	0,386
GG1408	6x70+25+3x4		70	70	25	4	65	7750	0,272	0,272
GG1409	3x35+3x25+25+6x2,5	13	35	25	25	2,5	65	5000	0,554	0,780
GG1410	6x35+25+6x2,5		35	35	25	2,5	65	5250	0,554	0,554
GG1411	3x50+3x16+25+6x2,5		50	16	25	2,5	65	5400	0,386	1,210
GG1412	3x50+3x25+25+6x2,5		50	25	25	2,5	65	5600	0,386	0,780
GG1413	3x50+3x35+25+6x2,5		50	35	25	2,5	65	5800	0,386	0,554
GG1414	6x50+25+6x2,5		50	50	25	2,5	65	6100	0,386	0,386
GG1415	3x70+3x16+25+6x2,5		70	16	25	2,5	65	6800	0,272	1,210
GG1416	3x70+3x25+25+6x2,5		70	25	25	2,5	65	7000	0,272	0,780
GG1417	3x70+3x35+25+6x2,5		70	35	25	2,5	65	7200	0,272	0,554
GG1418	3x70+3x50+25+6x2,5		70	50	25	2,5	65	7550	0,272	0,386
GG1419	6x70+25+6x2,5		70	70	25	2,5	65	8050	0,272	0,272
GG1420	6x95+25+7x4	14	95	95	25	4	75	10200	0,206	0,206

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Total conductros [n]	power – 1st strand [n]	power 2nd strand [n]	protective [n]	control [n]
10	3	3	1	3
13	3	3	1	6
14	3	3	1	7

BITNER CABLE FACTORY

O2nGcekż-G2

Rubber insulated and sheathed multi-conductor screened mining cable with two conductor strands

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining cable with two strands of screened cooper conductors in heat-resistant rubber insulation and two-layered rubber sheath with reinforcing braid, resistant to flame propagation
Max. operating temperature: 90°C
Operating voltage: 0,6/1 kV
Test voltage:
power conductors: 3,2 kV
control conductors: 2 kV
Max. control conductor resistance:
For 2,5 mm^2 – 8,21 Ω/km
For 4 mm^2 – 5,09 Ω/km
Min. bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices

mining applications
high flexibility
>29 non-flammable sheath
a b c A B for potentially explosive areas
oil-resistant
UV resistant

Construction:

Power and control conductors: cooper, or cooper tin-plated, multi-stranded class 5 acc. PN-EN 60228
Protective conductor: cooper wire braid and synthetic thread on the control conductor sheath and power conductors
Separator: polyester film on power conductors
Power and control conductor insulation: heat-resistant insulation rubber acc. PN-89/E-29100
Conductor colours: as per table
Insulated power conductor lapping: polyester film
Screen on power and control conductor sheath: tin-plated cooper wire braid, diameter at least 0,3 mm and synthetic thread of min. covering capacity 65 %
Control conductor sheath: IZ or IEP rubber acc. PN-89/E-29100
Core: IZ or IEP rubber acc. PN-E-29100
Reinforcing braid: fibres of polyamide or other compound of total min. breaking force 1260 N
Outer sheath: special ON4 rubber acc. PN-89/E-29100, two-layers, non-flammable, oxygen index > 29
Sheath colour: black

Application:

Cable suitable for supplying portable and mobile devices operating in underground in mines, in methane and non-methane areas, and excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B” coal dust explosion hazard.

Sample cable marking:
O2nGcekż - G2 3x70 + 3 x35 + 25 + 6x2,5mm^2 0,6/1kV – 13-conductor cable, nominal power conductor I cross section: 70 mm^2, power conductor– II: 35 mm^2, protective conductor: 25 mm^2, control conductor: 2,5 mm^2, voltage rating 0,6/1kV

Total conductors	Colour of conductor insulation or rubber covered tape lapping	
	power	control
10	green green red red natural natural	green red natural
13	green green red red natural natural	green green red red natural natural
14	green green red red natural natural	green green red red natural natural blue

O2nGcekż-G2

Rubber insulated and sheathed multi-conductor screened mining cable with two conductor strands

Cat. no.	Number and conductor cross section [nxmm²]	Total conductors [n]	Conductor nominal cross section				Max. outer diameter [mm]	Calculated cable weight [kg/km]	Max. conductor resistance at 20°C	
			power I [mm²]	power II [mm²]	protective [mm²]	control [mm²]			I [Ω/km]	II [Ω/km]
GG1500	3x35+3x25+25+3x4	10	35	25	25	4	57,8	4850	0,554	0,780
GG1501	6x35+25+3x4		35	35	25	4	57,8	5150	0,554	0,554
GG1502	3x50+3x25+25+3x4		50	25	25	4	57,8	5500	0,386	0,780
GG1503	3x50+3x35+25+3x4		50	35	25	4	57,8	5700	0,386	0,554
GG1504	6x50+25+3x4		50	50	25	4	65	5900	0,386	0,386
GG1505	3x70+3x25+25+3x4		70	25	25	4	65	6750	0,272	0,780
GG1506	3x70+3x35+25+3x4		70	35	25	4	65	7000	0,272	0,554
GG1507	3x70+3x50+25+3x4		70	50	25	4	65	7300	0,272	0,386
GG1508	6x70+25+3x4		70	70	25	4	65	7750	0,272	0,272
GG1509	3x35+3x25+25+6x2,5	13	35	25	25	2,5	65	5000	0,554	0,780
GG1510	6x35+25+6x2,5		35	35	25	2,5	65	5250	0,554	0,554
GG1511	3x50+3x16+25+6x2,5		50	16	25	2,5	65	5400	0,386	1,210
GG1512	3x50+3x25+25+6x2,5		50	25	25	2,5	65	5600	0,386	0,780
GG1513	3x50+3x35+25+6x2,5		50	35	25	2,5	65	5800	0,386	0,554
GG1514	6x50+25+6x2,5		50	50	25	2,5	65	6100	0,386	0,386
GG1515	3x70+3x16+25+6x2,5		70	16	25	2,5	65	6800	0,272	1,210
GG1516	3x70+3x25+25+6x2,5		70	25	25	2,5	65	7000	0,272	0,780
GG1517	3x70+3x35+25+6x2,5		70	35	25	2,5	65	7200	0,272	0,554
GG1518	3x70+3x50+25+6x2,5		70	50	25	2,5	65	7550	0,272	0,386
GG1519	6x70+25+6x2,5		70	70	25	2,5	65	8050	0,272	0,272
GG1520	6x95+25+7x4	14	95	95	25	4	75	10200	0,206	0,206

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Total conductros [n]	power – 1st strand [n]	power 2nd strand [n]	protective [n]	control [n]
10	3	3	1	3
13	3	3	1	6
14	3	3	1	7

BITNER CABLE FACTORY

Current carrying capacity of OnGcekż-G2 and O2nGcekż-G2 cables

Long-term AC or DC current carrying capacity of sheathed OnGcekż-G2 and O2nGcekż-G2 mining cables with double conductor strands, voltage rating 0,6/1 kV, used in underground mining excavations at ambient temperatures not exceeding 25°C.

Power conductor section 3x35 mm^2 + 3x25 mm^2	
Current in 1 conductor strand (35 mm^2) [A]	Current in 2 conductor strand (25 mm^2) [A]
0	167
10	167
20	167
30	166
40	165
50	163
60	161
70	159
80	156
90	153
100	150
110	146
120	141
130	136
140	130
150	124
160	116
170	107
180	93
190	75
200	50
207	0

Power conductor section 3x35mm^2+3x35mm^2	
Wartość prądu w I układzie żył (35 mm^2) [A]	Wartość prądu w II układzie żył (35 mm^2) [A]
0	207
10	207
20	206
30	205
40	204
50	202
60	200
70	197
80	194
90	190
100	185
110	180
120	175
130	168
140	161
150	153
160	141
170	127
180	110
190	89
200	59
207	0

Power conductor section 3x50mm^2+3x16mm^2	
Current in 1 conductor strand (50 mm^2) [A]	Current in 2 conductor strand (16 mm^2) [A]
0	136
10	136
20	136
30	135
40	135
50	134
60	133
70	132
80	130
90	129
100	127
110	125
120	123
130	120
140	118
150	115
160	111
170	107
180	103
190	99
200	94
210	88
220	81
230	70
240	57
250	38
258	0

Power conductor section 3x50mm^2+3x25mm^2	
Current in 1 conductor strand (50 mm^2) [A]	Current in 2 conductor strand (25 mm^2) [A]
0	174
10	174
20	174
30	173
40	172
50	171
60	170
70	168
80	167
90	165
100	162
110	160
120	157
130	154
140	150
150	146
160	142
170	137
180	132
190	126
200	119
210	112
220	101
230	88
240	71
250	47
258	0

Current carrying capacity of OnGcekż-G2 and O2nGcekż-G2 cables

Power conductor section 3x50mm²+3x35mm²	
Current in 1 conductor strand (50 mm²) [A]	Current in 2 conductor strand (35 mm²) [A]
0	211
10	211
20	210
30	210
40	209
50	207
60	206
70	204
80	202
90	199
100	197
110	194
120	190
130	186
140	182
150	177
160	172
170	166
180	160
190	152
200	145
210	133
220	120
230	104
240	84
250	56
258	0

Power conductor section 3x50mm²+3x50mm²	
Current in 1 conductor strand (50 mm²) [A]	Current in 2 conductor strand (50mm²) [A]
0	258
10	257
20	257
30	256
40	255
50	253
60	252
70	249
80	247
90	244
100	240
110	236
120	232
130	227
140	222
150	216
160	210
170	203
180	195
190	186
200	174
210	160
220	144
230	125
240	101
250	67
258	0

Power conductor section 3x70mm²+3x16mm²	
Current in 1 conductor strand (70 mm²) [A]	Current in 2 conductor strand (16 mm²) [A]
0	139
10	139
20	139
30	139
40	139
50	138
60	137
70	137
80	136
90	135
100	134
110	132
120	131
130	129
140	128
150	126
160	124
170	121
180	119
190	117
200	114
210	111
220	107
230	104
240	100
250	95
260	91
270	85
280	80
290	70
300	58
310	42
320	12
320	0

Power conductor section 3x70mm²+3x25mm²	
Current in 1 conductor strand (70 mm²) [A]	Current in 2 conductor strand (25 mm²) [A]
0	178
10	178
20	178
30	177
40	177
50	176
60	175
70	174
80	173
90	172
100	170
110	169
120	167
130	165
140	163
150	160
160	158
170	155
180	152
190	149
200	145
210	141
220	137
230	132
240	127
250	122
260	116
270	109
280	100
290	88
300	73
310	53
320	15
320	0

Current carrying capacity of OnGcekż-G2 and O2nGcekż-G2 cables

Power conductor section 3x70mm^2+3x35mm^2	
Current in 1 conductor strand (70 mm^2) [A]	Current in 2 conductor strand (35 mm^2) [A]
0	216
10	216
20	215
30	215
40	214
50	213
60	212
70	211
80	210
90	208
100	206
110	204
120	202
130	200
140	197
150	194
160	191
170	188
180	184
190	180
200	175
210	171
220	165
230	160
240	154
250	147
260	140
270	131
280	118
290	104
300	86
310	63
320	18
320	0

Power conductor section 3x70mm^2+3x50mm^2	
Current in 1 conductor strand (70 mm^2) [A]	Current in 2 conductor strand (50 mm^2) [A]
0	264
10	263
20	263
30	263
40	262
50	261
60	260
70	258
80	256
90	254
100	252
110	250
120	247
130	244
140	241
150	237
160	233
170	229
180	225
190	220
200	214
210	208
220	202
230	195
240	188
250	180
260	169
270	156
280	141
290	124
300	103
310	75
320	22
320	0

Current carrying capacity of OnGcekż-G2 and O2nGcekż-G2 cables

Power conductor section 3x70mm^2+3x70mm^2	
Current in 1 conductor strand (70 mm^2) [A]	Current in 2 conductor strand (70 mm^2) [A]
0	321
10	321
20	320
30	320
40	319
50	318
60	316
70	314
80	312
90	310
100	307
110	304
120	301
130	297
140	293
150	289
160	284
170	279
180	273
190	267
200	260
210	253
220	246
230	237
240	227
250	214
260	200
270	185
280	168
290	147
300	122
310	89
320	27
321	0

Power conductor section 3x95mm^2 +3x95mm^2	
Current in 1 conductor strand (95 mm^2) [A]	Current in 2 conductor strand (95 mm^2) [A]
0	377
10	377
20	377
30	376
40	375
50	374
60	373
70	372
80	370
90	368
100	366
110	364
120	361
130	358
140	355
150	351
160	348
170	344
180	339
190	335
200	330
210	324
220	318
230	312
240	306
250	299
260	291
270	283
280	274
290	262
300	248
310	234
320	217
330	199
340	178
350	154
360	123
370	80
377	0

OnZGcekż-GW(A)

Rubber insulated and sheathed multi-conductor screened mining cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining cable with cooper conductors in heat-resistant rubber and sheath of reinforced, non-flammable rubber, with aramid braid, screened conductors and longitudinal seal
Max. operating temperature: 90°C
Operating voltage: 0,6/1 kV
Test voltage:
power conductors: 3,2 kV
control conductors: 2 kV
Max. control conductor resistance:
For 2.5 mm^2 – 8,21 Ω/km
For 4 mm^2 – 5,09 Ω/km
Min. bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices


mining applications


high flexibility

non-flammable sheath

for potentially explosive areas


increased mechanical strength


UV resistant


oil-resistant

Construction:

Power, protective, control conductors: cooper, tin-plated, multi-stranded class 5 acc. PN-EN 60228
Separator: polyester film on power conductors
Power and control conductor insulation: heat-resistant insulation rubber acc. PN-89/E-29100
Conductor colours:
7-conductor cables:
power conductors: natural, red, blue
control conductors: natural, red, blue
10-conductor cables:
power conductors: natural, red, blue
control conductors: 2 x blue, 2 x natural, 2 x red
Screen on power and control conductor sheath:
conductive tape lapping and tin-plated cooper wire braid, diameter at least 0.3 mm and synthetic thread of min. covering capacity 30 %
Control conductor sheath: IZ rubber or IEP rubber acc. PN-89/E-29100
Liners: vulcanised rubber
Longitudinal seal: tape swelling in water and moisture
Inner sheath: ON5 rubber acc. PN-E-29100
Reinforcing braid: aramid lines of total min. breaking force 40 kN
Outer sheath: ON4 rubber acc. PN-89/E-29100 resistant to flame propagation, oxygen index > 29
Sheath colour: black

Application:

Cable suitable for supplying portable and mobile devices operating in underground in mines, in methane and non-methane areas, and excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B” coal dust explosion hazard. The cables are suitable for operating long wall coal-cutting machines supplied with 1 kV voltage, without the need of a cable carrier.

Sample cable marking:
OnZGcekż - GW(A) 3x70 + 35 + 6x4 mm^2 0,6/1kV – 10-conductor cable,
Nominal power conductor cross section: 70 mm^2, protective conductor: 35 mm^2, control conductor: 4 mm^2, voltage rating: 0,6/1kV

Cat. no.	Number and conductor cross section [nxmm²]	Total conductors [n]	Nominal conductor cross section			Max. outer diameter [mm]	Calculated cable weight [kg/km]
			power [mm²]	protective [mm²]	control [mm²]		
GG1600	3x35+16+3x2,5	7	35	16	2,5	44,1	2710
GG1601	3x50+25+3x4		50	25	4	46,5	3576
GG1602	3x70+35+3x4		70	35	4	57,6	5140
GG1603	3x35+16+6x2,5	10	35	16	2,5	44,1	3000
GG1604	3x50+25+6x2,5		50	25	2,5	46,5	3600
GG1605	3x70+35+6x4		70	35	4	57,6	5172
GG1606	3x95+35+6x4		95	35	4	59,9	6418

OnZGcekż-GW(A)

Rubber insulated and sheathed multi-conductor screened mining cable

Total conductros [n]	power – 1st strand [n]	power 2nd strand [n]	protective [n]	control [n]
10	3	3	1	3
13	3	3	1	6
14	3	3	1	7

Power conductor cross section [mm^2]	Power conductor resistance at 25ºC [Ω/km]	Current carrying capacity AC or DC at <25°C [A]	Unit inductivity [mH/km]	Unit inductive reactance [Ω/km]
35	0,565	183	0,269	0,084
50	0,393	227	0,262	0,082
70	0,277	281	0,254	0,080
95	0,210	337	0,249	0,078

OnGcekżi-G

Rubber insulated and sheathed multi-conductor screened mining cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining cable with cooper conductors in in heat-resistant rubber insulation and oil-resistant rubber sheath, resistant to flame propagation, with individually screened power conductors

Max. operating temperature: 90°C
Operating voltage: 0,6/1 kV
Test voltage:
power conductors: 3,2 kV control conductors: 2 kV
Max. control conductor resistance:
For 2,5 mm^2 – 8,21 Ω/km
For 4 mm^2 – 5,09 Ω/km
Min. bending radius:
6 x Ø for permanent installation
10 x Ø for portable devices


mining applications


high flexibility

non-flammable sheath

for potentially explosive areas


oil-resistant


UV resistant

Construction:

Power, protective, control conductors: tin-plated cooper, (for cross sections ≥ 6mm^2 cooper) multi-stranded class 5 acc. PN-EN 60228
Protective conductor:
- in 3-conductor cables, as two cooper conductors in gaps between the power conductors
- in 4 and 5-conductor cables, as non-insulated conductor on which power and control conductors are stranded
- in 6, 7 and 8 - conductor cables, as cooper wire braid on centrally placed rubber liner
- in 10 and 12-conductor cables, as cooper wire braid on rubber liners in gaps between the power conductors

Power and control conductor insulation: IEP heat-resistant insulation rubber acc. PN-89/E-29100
Conductor colours: as per table
Insulated power conductor lapping: polyester film
Screen on power and control conductors: tin-plated cooper wire braid, diameter at least 0,2 mm and synthetic thread of min. covering capacity 65 %
Liners: vulcanised rubber
Stranding element:
- 3 to 10 and 12-conductor cables: insulated and screened power and control conductors stranded together with two parts of protective conductor
- other cables: insulated and screened power, control and protective conductors stranded around centrally located protective conductor

Outer sheath: ON5 or ON4 rubber acc. PN-E-29100, resistant to flame propagation, oxygen index > 29
Sheath colour: black

Application:

Cables intended for supplying equipment operating in underground mines, in methane and methane-free areas, in excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B”, coal dust explosion hazard.

Sample cable marking:
OnGcekżi -G 3 x 4 + 4 + 3 x 4 mm^2 0,6/1kV – 7-conductor cable, nominal power conductor cross section: 4 mm^2, protective conductor: 4 mm^2, control conductor: 4 mm^2, voltage rating: 0,6/1kV

Total conductors	Insulation colours	
	power	control
3	natural, red	-
4	blue, natural, red	-
5	blue, natural, red	blue,
6	blue, natural, red	blue, natural
7	blue, natural, red or all natural	blue, natural, red
8	blue, natural, red or all natural	blue, natural, red, brown
10	blue, natural, red or all natural	2 blue, 2 natural, 2 red
12	blue, natural, red or all natural	2 blue, 2 natural, red, 2 brown

OnGcekżi-G

Rubber insulated and sheathed multi-conductor screened mining cable

Cat. no.	Number and conductor cross section	Total conductors	Number of conductors			Nominal conductor cross section			Max. outer diameter	Calculated cable weight
			power	protective	control	power	protective	control		
	[nxmm^2]	[n]	[n]	[n]	[n]	[mm^2]	[mm^2]	[mm^2]	[mm]	[kg/km]
GG1176	2x1+1	3	2	1	-	1	1	-	16,1	255
GG1150	2x1,5+1,5					1,5	1,5	-	16,7	290
GG1151	2x2,5+2,5					2,5	2,5	-	18,3	320
GG1152	2x4+4					4	4	-	20,4	455
GG1177	3x1+1	4	3	1	-	1	1	-	16,9	290
GG1153	3x1,5+1,5					1,5	1,5	-	18,2	325
GG1160	3x2,5+2,5					2,5	2,5	-	19,4	385
GG1167	3x4+4					4	4	-	22,9	538
GG1178	3x1+1+1	5	3	1	1	1	1	1	19,8	366
GG1154	3x1,5+1,5+1,5					1,5	1,5	1,5	20,0	420
GG1161	3x2,5+2,5+2,5					2,5	2,5	2,5	21,4	545
GG1168	3x4+4+4					4	4	4	24,5	775
GG1186	3x10+10+2,5					10	10	2,5	25,9	1050
GG1187	3x16+10+2,5					16	10	2,5	30,8	1500
GG1188	3x25+16+4					25	16	4	35,0	2070
GG1179	3x1+1+2x1	6	3	1	2	1	1	1	21,2	430
GG1155	3x1,5+1,5+2x1,5					1,5	1,5	1,5	21,9	485
GG1162	3x2,5+2,5+2x2,5					2,5	2,5	2,5	23,0	570
GG1169	3x4+4+2,5					4	4	4	26,5	878
GG1180	3x1+1+3x1	7	3	1	3	1	1	1	22,7	532
GG1156	3x1,5+1,5+3x1,5					1,5	1,5	1,5	23,5	605
GG1163	3x2,5+2,5+3x2,5					2,5	2,5	2,5	24,7	700
GG1170	3x4+4+3x4					4	4	4	28,6	990
GG1189	3x16+10+3x2,5					16	10	2,5	32,1	1550
GG1190	3x25+16+3x2,5					25	16	2,5	37,9	2260
GG1181	3x1+1+4x1	8	3	1	4	1	1	1	25,2	640
GG1157	3x1,5+1,5+4x1,5					1,5	1,5	1,5	26,0	725
GG1171	3x2,5+2,5+4x2,5					2,5	2,5	2,5	28,6	855
GG1172	3x4+4+4x4					4	4	4	32,0	1216
GG1182	3x1+1+6x1	10	3	1	6	1	1	1	28,4	820
GG1158	3x1,5+1,5+6x1,5					1,5	1,5	1,5	29,4	940
GG1173	3x2,5+2,5+6x2,5					2,5	2,5	2,5	31,0	1095
GG1184	3x4+4+6x4					4	4	4	36,2	1535
GG1183	3x1+1+8x1	12	3	1	8	1	1	1	29,2	840
GG1159	3x1,5+1,5+8x1,5					1,5	1,5	1,5	30,3	960
GG1164	3x2,5+2,5+8x2,5					2,5	2,5	2,5	33,7	1145
GG1185	3x4+4+8x4					4	4	4	33,8	1620

Power conductor cross section	Power conductor resistance at 25ºC		AC or DC current carrying capacity at < 25°C	Unit inductivity	Unit inductive reactance
	bare wires	tin-plated wires			
[mm^2]	[Ω/km]	[Ω/km]	[A]	[mH/km]	[Ω/km]
1	-	20	20	0,42	0,132
1,5	-	13,7	28	0,40	0,126
2,5	-	8,21	37	0,38	0,119
4	-	5,09	50	0,35	0,110
6	3,3	3,39	64	0,33	0,104
10	1,91	1,95	90	0,32	0,101
16	1,21	1,24	118	0,31	0,097
25	0,780	0,795	152	0,30	0,094

OnG-Szn

Rubber insulated and sheathed two-conductor mining power cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Sheathed mining cable with cooper conductors in normal rubber insulation and oil-resistant rubber sheath, resistant to flame propagation, with load bearing parts
Max. operating temperature: 60°C
Operating voltage: 0,6/1 kV
Test voltage: 3 kV
Min. bending radius: 12 x Ø
Load bearing part breaking force: at least 3 times the actual weight of 1 km cable

Construction:

Conductors: cooper, tin-plated, multi-stranded class 5 acc. PN-EN 60228
Load bearing part: galvanised steel wire lines of tensile strength 1600 MPa, acc. PN-69/M- 80207 or PN-69/M-80208
Insulation: IZ rubber acc. PN-89/E-29100
Load bearing sheath: IZ rubber acc. PN-89/E-29100
Conductor insulation colours: red, natural
Colour of load bearing sheath: black
Stranding element: stranded power conductors and load bearing lines
Outer sheath: ON3 rubber acc. PN-89/E-29100, resistant to flame propagation, oxygen index > 29
Sheath colour: black

Application:

Cables for supplying electric systems while digging mining shafts.

Sample cable marking:
OnG - Szn 2x6 mm^2 + 2x25 mm^2 0,6/1kV – cable with 2 cooper power conductors, nominal cross section: 6 mm^2, two load bearing lines, cross section: 25 mm^2, voltage rating: 0,6/1kV


mining applications

non-flammable sheath

shaft cable


oil-resistant

UV resistant

Cat.no	Conductor number and cross section [nxmm^2]	Load bearing line number and cross section [nxmm^2]	Approximate cable diameter [mm]	Max condutor resistance at 20°C [Ω/km]	Calculated cable weight [kg/km]
GG1650	2x6	2x14	36,5	3,39	1500
GG1651	2x6	2x22	39,5	3,39	1750
GG1652	2x6	2x25	39,5	3,39	1830
GG1653	2x10	2x22	40,6	1,95	1950
GG1654	2x10	2x25	40,6	1,95	2050

H07 RN-F

Rubber insulated and sheathed single or multi-conductor flexible cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

450/750 V rated cable with EPR rubber insulation, chloroprene oil-resistant rubber sheath, resistant to flame propagation, with multi-stranded flexible conductors
Operating temperature: -40°C to 60°C
Conductor temperature in short circuit: 200°C
Installation temperature: -25°C to 50°C
Operating voltage: U_0/U=450/750 V
Test voltage: 2500 V
Minimum bending radius:
for 1-conductor cable:
fixed installation: 4 x Ø portable installation: 5 x Ø
for multi-conductor cable:
fixed installation: 4 x Ø portable installation: 6 x Ø
for cables diameter Ø>20 mm:
fixed installation: 4 x Ø
portable installation: 8 x Ø

Construction:

Conductors: tin-plated cooper, multi-stranded or bare class 5 acc. PN-EN 60228
Insulation: EPR type E14 rubber
Conductor marking: as per table
Outer sheath: EM2 chloroprene oil-resistant rubber sheath, resistant to flame propagation, acc. PN-EN 60332-1, oxygen index > 29
Sheath colour: black

Application:

Rubber sheathed cable for supplying portable and mobile devices operating in underground, open-pit and strip mines, out of areas exposed to the risk of methane and coal dust explosion.

Sample cable marking:
H07 RN-F 1x25mm^2 450/750V – 1-conductor cable, voltage rating: 450/750 V, power conductor cross section: 25mm^2
H07 RN-F 2x2,5+2,5mm^2 450/750V – 3-conductor cable, voltage rating: 450/750V, power conductor cross section: 2,5mm^2, protective conductor: 2,5mm^2
H07 RN-F 3x2,5+2,5+2,5mm^2 450/750V – 5-conductor cable, voltage rating: 450/750V, power conductor cross section: 2,5mm^2, protective conductor 2,5mm^2


mining applications


industrial applications


PN-EN60332-1


high flexibility

non-flammable sheath


oil-resistant


UV resistant

H07 RN-F cable – conductor marking

Total conductors	Conductor number and type			Insulation colours		
	power	protective	control	power	protective	control
1	1	-	-	black	-	-
3	2	1	-	brown, blue	yellow-green	-
4	3	1	-	black, grey, brown	yellow-green	-
5	3	1	1	grey, blue, brown	yellow-green	black

H07 RN-F single-conductor cable

Cat.no	Conductor number and cross section [nxmm^2]	Conductor nominal cross section [mm^2]	Max. cable diameter [mm]	Calculated cable weight [kg/km]
IP0201	1 x 2,5	2,5	7,9	70
IP0202	1 x 4	4	9,0	100
IP0203	1 x 6	6	9,8	140
IP0204	1 x 10	10	11,9	220
IP0205	1 x 16	16	13,4	290
IP0206	1 x 25	25	15,8	420
IP0207	1 x 35	35	17,9	530
IP0208	1 x 50	50	20,6	740
IP0209	1 x 70	70	23,3	980
IP0210	1 x 95	95	26,0	1270
IP0211	1 x 120	120	28,6	1560

BITNER CABLE FACTORY

H07 RN-F

Rubber insulated and sheathed single or multi-conductor flexible cable

H07 RN-F 3, 4 and 5-conductor

Cat. no.	Number and conductor cross section [nxmm²]	Total conductors [n]	Number of conductors			Nominal conductor cross section			Max. outer diameter [mm]	Calculated cable weight [kg/km]
			power [n]	protective [n]	control [n]	power [mm²]	protective [mm²]	control [mm²]		
IP0228	2x2,5+2,5	3	2	1	-	2,5	2,5	-	14,0	220
IP0229	2x4+4					4	4	-	16,2	340
IP0230	2x6+6					6	6	-	18,0	450
IP0231	2x10+10					10	10	-	24,2	800
IP0232	2x16+16					16	16	-	27,6	1060
IP0233	2x25+25					25	25	-	33,0	1520
IP0243	3x2,5+2,5	4	3	1	-	2,5	2,5	-	15,5	270
IP0244	3x4+4					4	4	-	17,9	410
IP0245	3x6+6					6	6	-	20,0	570
IP0246	3x10+10					10	10	-	26,5	990
IP0247	3x16+16					16	16	-	30,1	1300
IP0248	3x25+25					25	25	-	36,6	1930
IP0257	3x2,5+2,5+2,5	5	3	1	1	2,5	2,5	2,5	17,0	348
IP0258	3x4+4+4					4	4	4	19,9	510
IP0259	3x6+6+6					6	6	6	22,2	710
IP0260	3x10+10+10					10	10	10	29,1	1210
IP0261	3x16+16+16					16	16	16	33,3	1600
IP0262	3x25+25+25					25	25	25	40,4	2370

BITNER Cable Factory reserves the right to modify specifications without prior notification.
NOTE: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

Resistance of H07 RN-F cable conductors at 20°C

Conductor cross section [mm²]	Conductor resistance [Ωm/km]
2,5	8,21
4	5,09
6	3,39
10	1,95
16	1,24
25	0,795
35	0,565
50	0,393
70	0,277
95	0,210
120	0,164

H07 BQ-F

Flexible cables of increased mechanical strength and chemical resistance, 450/750 V

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

Technical data:

450/750 V voltage rating flexible cable with EPR heat-resistant rubber insulation, polyurethane sheath, with multi-stranded flexible conductor
Operating temperature: -50°C to 90°C
Max. conductor operating temperature: 90°C
Minimum installation temperature: -40°C
Operating voltage: U_0/U=450/750 kV
Test voltage: 2500 V
Min. bending radius:
fixed installation: 5 x Ø
portable installation: 10 x Ø

Construction:

Conductors: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: EPR rubber mix
Insulation colours: acc. PN-HD 308 S2
1-conductor cables: black
2-conductor cables: blue, brown
3-conductor cables: yellow-green, blue, brown
4-conductor cables: yellow-green, brown, black, grey
5-conductor cables: yellow-green, blue, brown, black, grey
Above 5 conductors: yellow-green in the outer layer, other conductors black with contrasting digital print
Stranding element: conductors stranded together
Outer sheath: polyurethane
Sheath colour: orange

Application:

Materials used for insulation and sheath ensure special features: higher operating temperature, mechanical strength, resistance to wear, grease, oil and sewage. The cables are suitable for supplying mobile and portable devices operating in particularly severe environment (abrasion, bending, dragging, temperature changes), indoors and outdoors, e.g. in strip mines, in applications requiring cables of increased mechanical strength (conveyor belts).


mining applications


industrial applications


high flexibility


mechanical strength


oil-resistant


UV resistant

H07 BQ-F

Cat.no	n x mm²	Diameter [mm]	Calculated cable weight [kg/km]	Cu [kg/km]
IP0400	2x1,5	8,6	89	29
IP0401	2x2,5	10,2	134	48
IP0402	2x4	11,9	227	76
IP0406	3G1,5	9,1	112	43
IP0407	3G2,5	10,9	163	72
IP0408	3G4	12,5	270	115
IP0409	3G6	14,3	360	173
IP0410	3G10	19,6	607	288
IP0411	3G16	22,3	824	461
IP0413	4G1,5	10,4	141	58
IP0414	4G2,5	12,1	206	96
IP0415	4G4	13,9	307	154
IP0416	4G6	15,7	476	230
IP0417	4G10	21,8	738	384
IP0418	4G16	24,3	1022	614
IP0420	5G1,5	11,3	175	72
IP0421	5G2,5	13,3	258	120
IP0422	5G4	15,4	408	192
IP0423	5G6	17,5	588	288
IP0424	5G10	24,1	896	480
IP0425	5G16	26,9	1258	768

(H)07 BQ-F

Cat.no	n x mm²	Diameter [mm]	Calculated cable weight [kg/km]	Cu [kg/km]
IP0432	1G1,5	5,4	39	14,5
IP0433	1G2,5	6,2	53	24
IP0426	7G1,5	13,3	279	101
IP0427	7G2,5	15,9	415	168
IP0428	10G1,5	15,8	373	144
IP0429	10G2,5	19,3	588	240
IP0430	12G1,5	16,8	430	173
IP0431	12G2,5	19,6	630	289
IP0434	18G1,5	19,5	633	259
IP0435	18G2,5	24,4	946	432
IP0436	24G1,5	24,2	844	345
IP0437	24G2,5	18,5	1253	576

BITNER Cable Factory reserves the right to modify specifications without prior notification.
NOTE: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

OGŁ

Rubber insulated and sheathed cable
for deep well pump electric motors

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

Technical data:

Rubber insulated and sheathed cooper conductor cable, for supplying deep well pump motors, round
Operating temperature in water and air: -40°C to 60°C
Minimum installation temperature: -10°C
Operating voltage: 0,6/1 kV
Test voltage: 3 kV
Cable installation: immersed up to a depth of 20 m
Mechanical load: permissible longitudinal mechanical load of cable is 10 N/mm^2 *S where: S - total cross sectional area of conductors
Min. bending radius: 5 x Ø

Construction:

Conductors: cooper, tin-plated, multi-stranded class 5 acc. PN-EN 60228*
Insulation: IZ insulation rubber acc. PN-89/E-29100
Conductor colours:
3-conductor cables: brown, black, grey
4-conductor cables: yellow-green, brown, black, grey
Outer sheath: OZ3 rubber acc. PN-89/E-29100
Sheath colour: black

* it is permissible to make conductors of tin-plated wires intended only for the layer in direct contact with the rubber insulation

Application:

Cables for supplying electric motors of deep well pumps operating in strip and open-pit mines and other industrial facilities.

Sample cable marking: OGŁ 4x10mm^2 0,6/1kV – 4-conductor cable, conductor cross section: 10 mm^2, voltage rating: 0,6/1kV


mining applications


high flexibility

UV resistant

Conductor nominal cross section mm^2	Conductor resistance [Ω/km]
2,5	8,21
4	5,09
6	3,39
10	1,91
16	1,19
25	0,797
35	0,571
50	0,399

Cat.no	Conductor number and cross section [nxmm^2]	Max outer diameter [mm]	Calculated cable weight [kg/km]
GG1700	3x2,5	15,3	250
GG1701	3x4	16,9	280
GG1702	3x6	19,5	440
GG1703	3x10	23,8	690
GG1704	3x16	28,3	970
GG1705	3x25	33,4	1400
GG1706	3x35	35,9	1830
GG1707	3x50	40,6	2550
GG1708	4x2,5	16,4	290
GG1709	4x4	18,2	390
GG1710	4x6	21,1	530
GG1711	4x10	25,8	850
GG1712	4x16	30,7	1200
GG1713	4x25	36,4	1740
GG1714	4x35	39,1	2290
GG1715	4x50	44,3	3190


A D Y K A B L O W

CHAPTER III

MINING POWER CABLES VOLTAGE RATING 3,6/6 kV

YKGYFtZnyn 3,6/6 kV

Armoured mining power cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining power cable with PVC insulated cooper conductors, PVC inner sheath, armoured with galvanised steel tape, PVC outer sheath with increased flame propagation resistance

Temperature range:
Operating temperature: -30°C to 70°C
Operating voltage: 3,6/6 kV
Test voltage: 11 kV
Min. bending radius: 10 x Ø

mining applications

PN-EN 60332-1

PN-EN 60332-3
IEC 60332-3

>29
non-flammable sheath

≤45°
excavation sites with an inclination angle ≤45°

Construction:

Conductors: cooper, multi-stranded, compacted, class 2 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural, marked with digits 1, 2, 3
Stranding element: power conductors stranded around PVC liner
Filler sheath: PVC or non-vulcanised rubber
Inner sheath*: PVC
Common screen: cooper tape
Separating sheath: moulded PVC or special PVC tape
Armour: galvanised steel tape
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: red

* *it is permissible to make filler and inner sheath of the same material as one component*

Application:

Cables intended for transmission of electric energy in lines with a voltage rating of 3.6/6 kV and supplying electrical equipment in mines.
The cable can be installed in mining excavation sites with an inclination angle up to 45.

Sample cable marking: YKGYFtZnyn 3,6/6 kV 3x70/18 mm^2- cable with 3 power conductors, cross section: 70 mm^2, protective conductor cross section: 18mm^2, PVC insulation and sheath, galvanised steel tape armouring, PVC outer sheath with increased flame propagation resistance, voltage rating: 3,6/6kV

Cat. no.	Number and conductor cross section [nxmm^2]	Calculated outer diameter [mm]	Calculated cable weight [kg/km]
GP5000	3x10/10	38,7	2298
GP5001	3x16/10	41,5	2711
GP5002	3x25/14	44,5	3377
GP5003	3x35/16	47,2	4241
GP5004	3x50/18	51,0	5022
GP5005	3x70/18	55,0	5989
GP5006	3x95/20	60,0	7240
GP5007	3x120/22	63,8	8272
GP5008	3x150/24	69,3	9948
GP5009	3x185/27	72,7	11978

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Unit Inductive reactance [Ω/km]	Unit to-earth capacitance [μF/km]	Unit to-earth short circuit current [A/km]	Short circuit capacity [kA]	Long-term current carrying capacity [A]
10	1,83	0,400	0,126	0,11	0,35	1,15	66
16	1,15	0,372	0,117	0,11	0,37	1,84	85
25	0,727	0,349	0,110	0,12	0,40	2,88	110
35	0,524	0,338	0,106	0,13	0,41	4,03	133
50	0,387	0,317	0,100	0,13	0,43	5,75	160
70	0,268	0,299	0,094	0,14	0,45	8,05	197
95	0,193	0,286	0,090	0,15	0,47	10,93	240
120	0,153	0,278	0,087	0,15	0,49	13,8	276
150	0,124	0,268	0,084	0,15	0,50	17,25	314
185	0,0991	0,262	0,082	0,16	0,51	21,28	360

BITNER CABLE FACTORY

YKGYFoyn 3,6/6 kV

Armoured mining power cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining power cable with PVC insulated cooper conductors, PVC inner sheath, armoured with round steel wires, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C
Operating voltage: 3,6/6 kV
Test voltage: 11 kV
Min. bending radius: 10 x Ø

mining applications

PN-EN60332-1

PN-EN 60332-3 IEC 60332-3

>29
non-flammable sheath

≤90°
shaft cable

Construction:

Conductors: cooper, multi-stranded, compacted, class 2 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural, marked with **digits 1, 2, 3**
Stranding element: power conductors stranded around PVC liner
Filler sheath: PVC or non-vulcanised rubber
Inner sheath*: PVC
Common screen: cooper tape
Separating sheath: moulded PVC or special PVC tape
Armour: round galvanised steel wires
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: red
** it is permissible to make filler and inner sheath of the same material as one component*

Application:

Cables intended for transmission of electric energy in lines with a voltage rating of 3,6/6 kV and supplying electrical equipment in mines.
The cable can be installed in shafts and mining excavation sites with an inclination angle up to 90.

Sample cable marking: YKGYFoyn 3,6/6 kV 3x70/18 mm^2 - cable with 3 power conductors, cross section: 70 mm^2, protective conductor cross section: 18 mm^2, PVC insulation and sheath, round steel wire armouring, PVC outer sheath with increased flame propagation resistance, voltage rating: 3,6/6kV

Cat. no.	Number and conductor cross section [nxmm^2]	Calculated outer diameter [mm]	Calculated cable weight [kg/km]
GP5100	3x10/10	46,8	4715
GP5101	3x16/10	49,6	5290
GP5102	3x25/14	52,5	5963
GP5103	3x35/16	53,9	6460
GP5104	3x50/18	59,2	8315
GP5105	3x70/18	64,5	9753
GP5106	3x95/20	68,8	11178
GP5107	3x120/22	71,3	12670
GP5108	3x150/24	75,5	14455
GP5109	3x185/27	84,5	18462

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Unit Inductive reactance [Ω/km]	Unit to-earth capacitance [μF/km]	Unit to-earth short circuit current [A/km]	Short circuit capacity [kA]	Long-term current carrying capacity [A]
10	1,83	0,400	0,126	0,11	0,35	1,15	68
16	1,15	0,372	0,117	0,11	0,37	1,84	87
25	0,727	0,349	0,110	0,12	0,40	2,88	113
35	0,524	0,338	0,106	0,13	0,41	4,03	137
50	0,387	0,317	0,100	0,13	0,43	5,75	164
70	0,268	0,299	0,094	0,14	0,45	8,05	202
95	0,193	0,286	0,090	0,15	0,47	10,93	245
120	0,153	0,278	0,087	0,15	0,49	13,8	281
150	0,124	0,268	0,084	0,15	0,50	17,25	319
185	0,0991	0,262	0,082	0,16	0,51	21,28	369

YHKGYFtZnyn 3,6/6 kV

Armoured mining power cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining power cable with PVC insulated cooper conductors, individual conductor screening, PVC inner sheath, armoured with galvanised steel tape, PVC outer sheath with increased flame propagation resistance

Operating temperature: -30°C to 70°C
Operating voltage: 3,6/6 kV
Test voltage: 11 kV
Min. bending radius: 10 x Ø


mining applications


PN-EN60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

excavation sites with an inclination angle ≤45°

for potentially explosive areas

Construction:

Conductors: cooper, multi-stranded, compacted, class 2 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural, marked with digits 1, 2, 3
Conductor screen:
Non-metallic part: conductive tape Metallic part: cooper tape
Core: cooper wire or line
Stranding element: screened power conductors stranded around the core
Filler sheath: PVC or non-vulcanised rubber
Inner sheath*: PVC
Armour: galvanised steel tape
Outer sheath: special, non-flammable PVC, preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: red

** it is permissible to make filler and inner sheath of the same material as one component*

Application:

Cables intended for transmission of electric energy in lines with a voltage rating of 3.6/6 kV and supplying electrical equipment operating in mines. Cable suitable for use in excavation sites categorised as class “a”, “b” or “c” methane explosion hazard and class “A”, “B”, coal dust explosion hazard. The cable can be installed in mining excavation sites with an inclination angle up to 45.

Sample cable marking: YHKGYFtZnyn 3,6/6 kV 3x70/18 mm^2 - cable with 3 screened power conductors, cross section: 70 mm^2, protective conductor cross section: 18 mm^2, PVC insulation and sheath, galvanised steel tape armouring, PVC outer sheath with increased flame propagation resistance, voltage rating: 3,6/6kV

Cat. no.	Number and conductor cross section [nxmm^2]	Calculated outer diameter [mm]	Calculated cable weight [kg/km]
GP5200	3x10/10	40,4	3490
GP5201	3x16/10	43,1	3968
GP5202	3x25/14	46,2	4590
GP5203	3x35/16	47,9	5060
GP5204	3x50/18	51,8	6485
GP5205	3x70/18	56,7	7725
GP5206	3x95/20	61,1	9032
GP5207	3x120/22	65,4	10364
GP5208	3x150/24	70,8	12048
GP5209	3x185/27	77,2	15330

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Unit Inductive reactance [Ω/km]	Unit to-earth capacitance [μF/km]	Unit to-earth short circuit current [A/km]	Short circuit capacity [kA]	Long-term current carrying capacity [A]
10	1,83	0,417	0,131	0,28	0,92	1,15	69
16	1,15	0,388	0,122	0,33	1,07	1,84	89
25	0,727	0,363	0,114	0,38	1,24	2,88	117
35	0,524	0,352	0,111	0,41	1,34	4,03	141
50	0,387	0,330	0,104	0,45	1,48	5,75	168
70	0,268	0,310	0,097	0,53	1,74	8,05	209
95	0,193	0,297	0,093	0,60	1,97	10,93	254
120	0,153	0,287	0,090	0,66	2,17	13,80	292
150	0,124	0,278	0,087	0,72	2,36	17,25	331
185	0,0991	0,270	0,085	0,79	2,58	21,28	380

BITNER CABLE FACTORY

YHKGYFoyn 3,6/6 kV

Armoured mining power cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining power cable with PVC insulated cooper conductors, individual conductor screening, PVC inner sheath, armoured with round steel wire, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C
Operating voltage: 3,6/6 kV
Test voltage: 11 kV
Min. bending radius: 10 x Ø


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

shaft cable

for potentially explosive areas

Construction:

Conductors: cooper, multi-stranded, compacted, class 2 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural, marked with digits 1, 2, 3
Conductor screen:
Non-metallic part: conductive tape
Metallic part: cooper tape
Core: cooper wire or line
Stranding element: screened power conductors stranded around the core
Filler sheath: PVC or non-vulcanised rubber
Inner sheath*: PVC
Armour: round steel wires
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: red
** it is permissible to make filler and inner sheath of the same material as one component*

Application:

Cables intended for transmission of electric energy in lines with a voltage rating of 3.6/6 kV and supplying electrical equipment operating in mines. Cable suitable for use in excavation sites categorised as class “a”, “b” or “c” methane explosion hazard and class “A”, “B”, coal dust explosion hazard.
The cable can be installed in shafts and mining excavation sites with an inclination angle up to 90.

Sample cable marking: YHKGYFoyn 3,6/6 kV 3x70/18 mm^2 - cable with 3 screened power conductors, cross section: 70 mm^2, protective conductor cross section: 18 mm^2, PVC insulation and sheath, round steel wire armouring, PVC outer sheath with increased flame propagation resistance, voltage rating: 3,6/6kV

Cat. no.	Number and conductor cross section [nxmm^2]	Calculated outer diameter [mm]	Calculated cable weight [kg/km]
GP5300	3x10/10	47,7	5950
GP5301	3x16/10	50,5	6592
GP5302	3x25/14	53,6	7388
GP5303	3x35/16	55,0	7952
GP5304	3x50/18	60,2	10010
GP5305	3x70/18	65,1	11545
GP5306	3x95/20	69,8	13125
GP5307	3x120/22	72,3	14732
GP5308	3x150/24	76,8	16748
GP5309	3x185/27	85,6	20980

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Unit Inductive reactance [Ω/km]	Unit to-earth capacitance [μF/km]	Unit to-earth short circuit current [A/km]	Short circuit capacity [kA]	Long-term current carrying capacity [A]
10	1,83	0,417	0,131	0,28	0,92	1,15	70
16	1,15	0,388	0,122	0,33	1,07	1,84	90
25	0,727	0,363	0,114	0,38	1,24	2,88	119
35	0,524	0,352	0,111	0,41	1,34	4,03	143
50	0,387	0,330	0,104	0,45	1,48	5,75	171
70	0,268	0,310	0,097	0,53	1,74	8,05	211
95	0,193	0,297	0,093	0,60	1,97	10,93	257
120	0,153	0,287	0,090	0,66	2,17	13,80	295
150	0,124	0,278	0,087	0,72	2,36	17,25	334
185	0,0991	0,270	0,085	0,79	2,58	21,28	384

YHKGYekFtZnyn 3,6/6 kV

Screened and armoured mining power cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining power cable with PVC insulated cooper conductors, individual conductor screening, PVC inner sheath, common screen, armoured with galvanised steel tape, PVC outer sheath with increased flame propagation resistance
Operating temperature: -30°C to 70°C
Operating voltage: 3,6/6 kV
Test voltage: 11 kV
Min. bending radius: 10 x Ø


mining applications


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

non-flammable sheath

excavation sites with an inclination angle ≤45°

for potentially explosive areas

Construction:

Conductors: cooper, multi-stranded, compacted, class 2 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural, marked with digits 1, 2, 3
Conductor screen:
Non-metallic part: conductive tape
Metallic part: cooper tape
Core: cooper wire or line
Stranding element: screened power conductors stranded around the core
Filler sheath: PVC or non-vulcanised rubber
Inner sheath*: PVC
Common screen: cooper tape
Separating sheath: PVC or special PVC tape
Armouring: galvanised steel tape
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: red

** it is permissible to make filler and inner sheath of the same material as one component*

Application:

Cables intended for transmission of electric energy in lines with a voltage rating of 3,6/6 kV and supplying electrical equipment operating in mines. The cable can be used in excavation sites categorised as class “a”, “c” or “c” methane explosion hazard and class “A”, “B” coal dust explosion hazard.
The cable can be installed in mining excavation sites with an inclination angle up to 45.

Sample cable marking: YHKGYekFtZnyn 3,6/6 kV 3x70/18 mm^2 - cable with 3 screened power conductors, cross section: 70 mm^2, protective conductor cross section: 18 mm^2, PVC insulation and sheath, common screen, galvanised steel tape armouring, PVC outer sheath with increased flame propagation resistance, voltage rating: 3,6/6kV

Cat. no.	Number and conductor cross section [nxmm^2]	Calculated outer diameter [mm]	Calculated cable weight [kg/km]
GP5700	3x10/10	43,5	4000
GP5701	3x16/10	46,1	4505
GP5702	3x25/14	50,2	5794
GP5703	3x35/16	51,9	6300
GP5704	3x50/18	54,8	7136
GP5705	3x70/18	59,7	8422
GP5706	3x95/20	64,0	9772
GP5707	3x120/22	68,2	11140
GP5708	3x150/24	74,9	14307
GP5709	3x185/27	80,0	16246

BITNER Cable Factory reserves the right to modify specifications without prior notification.
Note: At the client's request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Unit Inductive reactance [Ω/km]	Unit to-earth capacitance [μF/km]	Unit to-earth short circuit current [A/km]	Short circuit capacity [kA]	Long-term current carrying capacity [A]
10	1,83	0,417	0,131	0,28	0,92	1,15	68
16	1,15	0,388	0,122	0,33	1,07	1,84	88
25	0,727	0,363	0,114	0,38	1,24	2,88	116
35	0,524	0,352	0,111	0,41	1,34	4,03	140
50	0,387	0,330	0,104	0,45	1,48	5,75	167
70	0,268	0,310	0,097	0,53	1,74	8,05	208
95	0,193	0,297	0,093	0,60	1,97	10,93	253
120	0,153	0,287	0,090	0,66	2,17	13,80	291
150	0,124	0,278	0,087	0,72	2,36	17,25	330
185	0,0991	0,270	0,085	0,79	2,58	21,28	379

BITNER CABLE FACTORY

YHKGXSFtZnyn 3,6/6 kV

Elektroenergetyczny pancerzony kabel górniczy

RoHS 2002/95/WE

ISO 9001:2000

Dane techniczne:

Kabel elektroenergetyczny (K), górniczy (G), z żyłami miedzianymi, o izolacji z polietylenu usieciowanego XLPE (XS), z ekranami indywidualnymi na żyłach (H), w powłoce PVC (Y), w pancerzu z taśm stalowych ocynkowanych (FtZn), w osłonie PVC o zwiększonej odporności na rozprzestrzenianie płomienia (yn)
Temperatura pracy: -30°C do 70°C
Maksymalna temperatura żyły podczas pracy: 90°C
Maksymalna temperatura żyły podczas zwarcia: 250°C
Napięcie pracy: 3,6/6 kV
Napięcie probiercze: 11 kV
Min. promień gięcia: 12 x Ø


zastosowanie w przemyśle górniczym


PN-EN60332-1


PN-EN 60332-3 IEC 60332-3

uniepalniona powłoka

w wyrobiskach o nachyleniu ≤45º

do stref zagrożonych wybuchem

Budowa:

Żyły: miedziane wielodrutowe zagęszczone kl 2 wg PN-EN 60228
Izolacja: polietylen usieciowany XLPE, z warstwą półprzewodzącą wytłoczona na żyle
Ekran na izolacji żył roboczych: część niemetaliczna - tworzywo przewodzące,
część metaliczna - taśmy miedziane
Kolory żył: naturalne
Rdzeń: drut lub linka miedziana
Ośrodek: ekranowane żyły robocze skręcone wokół rdzenia
Powłoka wypełniająca: PVC lub guma niewulkanizowana
Powłoka wewnętrzna*: PVC
Pancerz: taśmy stalowe ocynkowane
Osłona zewnętrzna: specjalny PVC, uniepalniony i nierozprzestrzeniający płomienia (wg PN-EN 60332-1 badanie na pojedynczym kablu oraz PN-EN 60332-3-24, IEC 60332-3 badanie na wiązce kablowej kategoria C) o indeksie tlenowym > 29
Kolor osłony: czerwony.
**dopuszcza się wykonanie powłoki wypełniającej i wewnętrznej z jednolitego materiału jako jeden element*

Zastosowanie:

Kable przeznaczone są do przesyłania energii elektrycznej w liniach o napięciu znamionowym 3,6/6 kV oraz do zasilania urządzeń elektroenergetycznych pracujących w zakładach górniczych. Kabel może być stosowany w wyrobiskach zaliczanych do stopnia „a", „b" lub „c" niebezpieczeństwa wybuchu metanu oraz klasy „A" lub „B" zagrożenia wybuchem pyłu węglowego. Kable można instalować w wyrobiskach górniczych o kącie nachylenia do 45°.

Przykład oznaczenia przewodu:
YHKGXSFtZnyn 3,6/6 kV 3x50/25 mm^2 - kabel z trzema żyłami roboczymi ekranowanymi o przekroju żył roboczych 50 mm^2 i przekroju żyły ochronnej 25mm^2, o izolacji z polietylenu usieciowanego i w powłoce PVC, w pancerzu z taśm stalowych ocynkowanych, w osłonie PVC o zwiększonej odporności na rozprzestrzenianie płomienia na napięcie znamionowe 3,6/6kV.

Nr kat.	Ilość i przekrój żył [nxmm^2]	obliczeniowa średnica zewnętrzna [mm]	obliczeniowa waga kabla [kg/km]
GP5400	3x16/16	39,6	3141
GP5401	3x25/16	41,8	3571
GP5402	3x35/16	44,3	4131
GP5403	3x50/25	46,5	4554
GP5404	3x70/25	49,4	5837
GP5405	3x95/30	54,4	6953
GP5406	3x120/50	58,5	8129
GP5407	3x150/50	63,1	9328
GP5408	3x185/70	68,0	10843
GP5409	3x240/70	73,8	13797

Zakłady Kablowe BITNER zastrzegają sobie prawo do zmiany specyfikacji bez wcześniejszego uprzedzenia
Uwaga: Na życzenie klienta wykonujemy przewody z inną ilością żył lub o innych przekrojach niż podane w tabeli

Przekrój żył [mm^2]	Rezystancja żył roboczych [Ω/km]	Indukcyjność jednostkowa [mH/km]	Reaktancja indukcyjna [Ω/km]	Pojemność doziemna jednostkowa [µF/km]	Obciążalność zwarciowa [kA]	Obciążalność długotrwała [A]
16	1,15	0,39	0,124	0,20	2,29	112
25	0,727	0,37	0,117	0,23	3,58	146
35	0,524	0,36	0,113	0,25	5,01	174
50	0,387	0,34	0,106	0,27	7,15	208
70	0,268	0,32	0,100	0,33	10,01	261
95	0,193	0,30	0,096	0,37	13,59	316
120	0,153	0,30	0,094	0,41	17,16	365
150	0,124	0,29	0,090	0,45	21,45	414
185	0,0991	0,28	0,088	0,49	26,46	472
240	0,0754	0,28	0,086	0,54	34,32	557

YHKGXSFoyn 3,6/6 kV

Elektroenergetyczny pancerzony kabel górniczy

RoHS 2002/95/WE

ISO 9001:2000

Dane techniczne:

Kabel elektroenergetyczny (K), górniczy (G), z żyłami miedzianymi, o izolacji z polietylenu usieciowanego XLPE (XS), z ekranami indywidualnymi na żyłach (H), o powłoce PVC (Y), w pancerzu z drutów stalowych okrągłych (Fo), w osłonie PVC o zwiększonej odporności na rozprzestrzenianie płomienia (yn).
Temperatura pracy: -30°C do 70°C
Maksymalna temperatura żyły podczas pracy: 90°C
Maksymalna temperatura żyły podczas zwarcia: 250°C
Napięcie pracy: 3,6/6 kV
Napięcie probiercze: 11 kV
Min. promień gięcia: 12 x Ø

zastosowanie w przemyśle górniczym

PN-EN60332-1

PN-EN 60332-3 IEC 60332-3

>29 uniepalniona powłoka

≤90° kabel szybowy

a b c A B do stref zagrożonych wybuchem

Budowa:

Żyły: miedziane wielodrutowe zagęszczone kl 2 wg PN-EN 60228
Izolacja: polietylen usieciowany XLPE, z warstwą półprzewodzącą wytłoczona na żyle
Ekran na izolacji żył roboczych: część niemetaliczna - tworzywo przewodzące,
część metaliczna - taśmy miedziane
Kolory żył: naturalne
Rdzeń: drut lub linka miedziana
Ośrodek: ekranowane żyły robocze skręcone wokół rdzenia
Powłoka wypełniająca: PCV lub guma niewulkanizowana
Powłoka wewnętrzna*: PVC
Pancerz: druty stalowe ocynkowane
Osłona zewnętrzna: specjalny PVC, uniepalniony i nierozprzestrzeniający płomienia (wg PN-EN 60332-1 badanie na pojedynczym kablu oraz PN-EN 60332-3-24, IEC 60332-3 badanie na wiązce kablowej kategoria C) o indeksie tlenowym > 29
Kolor osłony: czerwony.
**dopuszcza się wykonanie powłoki wypełniającej i wewnętrznej z jednolitego materiału jako jeden element*

Zastosowanie:

Kable przeznaczone są do przesyłania energii elektrycznej w liniach o napięciu znamionowym 3,6/6 kV oraz do zasilania urządzeń elektroenergetycznych pracujących w zakładach górniczych.
Kabel może być stosowany w wyrobiskach zaliczanych do stopnia „a", „b" lub „c" niebezpieczeństwa wybuchu metanu oraz klasy „A" lub „B" zagrożenia wybuchem pyłu węglowego.
Kable można instalować w szybach oraz wyrobiskach górniczych o kącie nachylenia do 90˚.

Przykład oznaczenia przewodu:
YHKGXSFoyn 3,6/6 kV 3x50/25 mm^2 - kabel z trzema żyłami roboczymi ekranowanymi o przekroju żył roboczych 50 mm^2 i przekroju żyły ochronnej 25mm^2, o izolacji z polietylenu usieciowanego i w powłoce PVC, w pancerzu z drutów stalowych okrągłych , w osłonie PVC o zwiększonej odporności na rozprzestrzenianie płomienia na napięcie znamionowe 3,6/6kV.

Nr kat.	Ilość i przekrój żył [nxmm^2]	obliczeniowa średnica zewnętrzna [mm]	obliczeniowa waga kabla [kg/km]
GP5500	3x16/16	43,1	4270
GP5501	3x25/16	45,7	4852
GP5502	3x35/16	48,8	5536
GP5503	3x50/25	50,5	6135
GP5504	3x70/25	54,6	7621
GP5505	3x95/30	59,5	9025
GP5506	3x120/50	63,8	10372
GP5507	3x150/50	68,0	11977
GP5508	3x185/70	73,4	13835
GP5509	3x240/70	79,9	17129

Zakłady Kablowe BITNER zastrzegają sobie prawo do zmiany specyfikacji bez wcześniejszego uprzedzenia
Uwaga: Na życzenie klienta wykonujemy przewody z inną ilością żył lub o innych przekrojach niż podane w tabeli

Przekrój żył [mm^2]	Rezystancja żył roboczych [Ω/km]	Indukcyjność jednostkowa [mH/km]	Reaktancja indukcyjna [Ω/km]	Pojemność doziemna jednostkowa [µF/km]	Obciążalność zwarciowa [kA]	Obciążalność długotrwała [A]
16	1,15	0,39	0,124	0,20	2,29	112
25	0,727	0,37	0,117	0,23	3,58	146
35	0,524	0,36	0,113	0,25	5,01	174
50	0,387	0,34	0,106	0,27	7,15	208
70	0,268	0,32	0,100	0,33	10,01	261
95	0,193	0,30	0,096	0,37	13,59	316
120	0,153	0,30	0,094	0,41	17,16	365
150	0,124	0,29	0,090	0,45	21,45	414
185	0,0991	0,28	0,088	0,49	26,46	472
240	0,0754	0,28	0,086	0,54	34,32	557

BITNER ZAKŁADY KABLOWE

YHKGXSekyn 3,6/6 kV

Elektroenergetyczny ekranowany kabel górniczy

RoHS 2002/95/WE

ISO 9001:2000

Dane techniczne:

Kabel elektroenergetyczny (K), górniczy (G), z żyłami miedzianymi, o izolacji z polietylenu usieciowanego XLPE (XS), z ekranami indywidualnymi na żyłach (H), w powłoce PVC (Y), z ekranem ogólnym (ek), w osłonie PVC o zwiększonej odporności na rozprzestrzenianie płomienia (yn).
Temperatura pracy: -30°C do 70°C
Maksymalna temperatura żyły podczas pracy: 90°C
Maksymalna temperatura żyły podczas zwarcia: 250°C
Napięcie pracy: 3,6/6 kV
Napięcie probiercze: 11 kV
Min. promień gięcia: 12 x Ø


zastosowanie w przemyśle górniczym


PN-EN60332-1


PN-EN 60332-3
IEC 60332-3

uniepalniona powłoka

do stref zagrożonych wybuchem

Budowa:

Żyły: miedziane wielodrutowe zagęszczone kl 2 wg PN-EN 60228
Izolacja: polietylen usieciowany XLPE, z warstwą półprzewodzącą wytłoczona na żyle
Ekran na izolacji żył roboczych: część niemetaliczna - tworzywo przewodzące,
część metaliczna - taśmy miedziane
Kolory żył: naturalne
Rdzeń: drut lub linka miedziana
Ośrodek: ekranowane żyły robocze skręcone wokół rdzenia
Powłoka wypełniająca: PCV lub guma niewulkanizowana
Powłoka wewnętrzna*: PVC
Ekran ogólny: taśmy miedziane
Osłona zewnętrzna: specjalny PVC, uniepalniony i nierozprzestrzeniający płomienia (wg PN-EN 60332-1 badanie na pojedynczym kablu oraz PN-EN 60332-3-24, IEC 60332-3 badanie na wiązce kablowej kategoria C) o indeksie tlenowym > 29
Kolor osłony: czerwony.
**dopuszcza się wykonanie powłoki wypełniającej i wewnętrznej z jednolitego materiału jako jeden element*

Zastosowanie:

Kable przeznaczone są do przesyłania energii elektrycznej w liniach o napięciu znamionowym 3,6/6 kV oraz do zasilania urządzeń elektroenergetycznych pracujących w zakładach górniczych. Kabel może być stosowany w wyrobiskach zaliczanych do stopnia „a", „b" lub „c" niebezpieczeństwa wybuchu metanu oraz klasy „A" lub „B" zagrożenia wybuchem pyłu węglowego.

Przykład oznaczenia przewodu:
YHKGXSFoyn 3,6/6 kV 3x120/50 mm^2 - kabel z trzema żyłami roboczymi ekranowanymi o przekroju żył roboczych 120 mm^2 i przekroju żyły ochronnej 50mm^2, o izolacji z polietylenu usieciowanego i powłoce PVC, z ekranem ogólnym , w osłonie PVC o zwiększonej odporności na rozprzestrzenianie płomienia na napięcie znamionowe 3,6/6kV.

Nr kat.	Ilość i przekrój żył [nxmm^2]	obliczeniowa średnica zewnętrzna [mm]	obliczeniowa waga kabla [kg/km]
GP5600	3x16/16	33,6	2673
GP5601	3x25/16	37,1	3404
GP5602	3x35/16	39,9	3858
GP5603	3x50/25	44,6	4413
GP5604	3x70/25	47,8	5365
GP5605	3x95/30	52,0	6753
GP5606	3x120/50	57,1	7598
GP5607	3x150/50	62,5	9232
GP5608	3x185/70	66,1	10397
GP5609	3x240/70	72,7	12913

Zakłady Kablowe BITNER zastrzegają sobie prawo do zmiany specyfikacji bez wcześniejszego uprzedzenia
Uwaga: Na życzenie klienta wykonujemy przewody z inną ilością żył lub o innych przekrojach niż podane w tabeli

Przekrój żył [mm^2]	Rezystancja żył roboczych [Ω/km]	Indukcyjność jednostkowa [mH/km]	Reaktancja indukcyjna [Ω/km]	Pojemność doziemna jednostkowa [μF/km]	Obciążalność zwarciowa [kA]	Obciążalność długotrwała [A]
16	1,15	0,36	0,113	0,20	2,29	111
25	0,727	0,34	0,106	0,23	3,58	144
35	0,524	0,33	0,103	0,25	5,01	173
50	0,387	0,31	0,096	0,27	7,15	207
70	0,268	0,29	0,091	0,33	10,01	259
95	0,193	0,28	0,087	0,37	13,59	315
120	0,153	0,27	0,085	0,41	17,16	363
150	0,124	0,26	0,082	0,45	21,45	412
185	0,0991	0,25	0,080	0,49	26,46	470
240	0,0754	0,25	0,078	0,54	34,32	555

YHKGXSekFtZnyn 3,6/6 kV

Elektroenergetyczny pancerzony kabel górniczy

RoHS 2002/95/WE

ISO 9001:2000

Dane techniczne:

Kabel elektroenergetyczny (K), górniczy (G), z żyłami miedzianymi, o izolacji z polietylenu usieciowanego XLPE (XS), z ekranami indywidualnymi na żyłach (H), o powłoce PVC (Y), z ekranem ogólnym (ek), w pancerzu z taśm stalowych ocynkowanych (FtZn), w osłonie PVC o zwiększonej odporności na rozprzestrzenianie płomienia (yn).

Temperatura pracy: -30°C do 70°C
Maksymalna temperatura żyły podczas pracy: 90°C
Maksymalna temperatura żyły podczas zwarcia: 250°C
Napięcie pracy: 3,6/6 kV
Napięcie probiercze: 11 kV
Min. promień gięcia: 12 x Ø.


zastosowanie w przemyśle górniczym


PN-EN 60332-1


PN-EN 60332-3 IEC 60332-3

uniepalniona powłoka

w wyrobiskach o nachyleniu ≤45°

do stref zagrożonych wybuchem

Budowa:

Żyły: miedziane wielodrutowe zagęszczone kl 2 wg PN-EN 60228
Izolacja: polietylen usieciowany XLPE, z warstwą półprzewodzącą wytłoczona na żyle
Ekran na izolacji żył roboczych:
część niemetaliczna - tworzywo przewodzące,
część metaliczna - taśmy miedziane
Kolory żył: naturalne
Rdzeń: drut lub linka miedziana
Ośrodek: ekranowane żyły robocze skręcone wokół rdzenia
Powłoka wypełniająca: PCV lub guma niewulkanizowana
Powłoka wewnętrzna*: PVC
Ekran ogólny: taśmy miedziane
Powłoka rozdzielająca: PVC lub specjalna taśma PVC
Pancerz: taśmy stalowe ocynkowane
Osłona zewnętrzna: specjalny PVC, uniepalniony i nierozprzestrzeniający płomienia (wg PN-EN 60332-1 badanie na pojedynczym kablu oraz PN-EN 60332-3-24, IEC 60332-3 badanie na wiązce kablowej kategoria C) o indeksie tlenowym > 29
Kolor osłony: czerwony.
**dopuszcza się wykonanie powłoki wypełniającej i wewnętrznej z jednolitego materiału jako jeden element*

Zastosowanie:

Kable przeznaczone są do przesyłania energii elektrycznej w liniach o napięciu znamionowym 3,6/6 kV oraz do zasilania urządzeń elektroenergetycznych pracujących w zakładach górniczych.
Kabel może być stosowany w wyrobiskach zaliczanych do stopnia „a", „b" lub „c" niebezpieczeństwa wybuchu metanu oraz klasy „A" lub „B" zagrożenia wybuchem pyłu węglowego.
Kable można instalować w wyrobiskach górniczych o kącie nachylenia do 45°.

Przykład oznaczenia przewodu:
YHKGXSekFtZnyn 3,6/6 kV 3x50/25 mm^2 - kabel z trzema żyłami roboczymi ekranowanymi o przekroju żył roboczych 50 mm^2 i przekroju żyły ochronnej 25mm^2, o izolacji z polietylenu usieciowanego i w powłoce PVC, z ekranem ogólnym i w pancerzu z taśm stalowych ocynkowanych, w osłonie PVC o zwiększonej odporności na rozprzestrzenianie płomienia na napięcie znamionowe 3,6/6kV.

Nr kat.	Ilość i przekrój żył [nxmm^2]	obliczeniowa średnica zewnętrzna [mm]	obliczeniowa waga kabla [kg/km]
GP5800	3x16/16	42,4	3692
GP5801	3x25/16	45,1	4237
GP5802	3x35/16	48,5	5185
GP5803	3x50/25	50,3	5776
GP5804	3x70/25	53,8	6739
GP5805	3x95/30	58,6	8064
GP5806	3x120/50	62,9	9342
GP5807	3x150/50	67,1	10758
GP5808	3x185/70	73,2	13220
GP5809	3x240/70	78,2	15498

Zakłady Kablowe BITNER zastrzegają sobie prawo do zmiany specyfikacji bez wcześniejszego uprzedzenia
Uwaga: Na życzenie klienta wykonujemy przewody z inną ilością żył lub o innych przekrojach niż podane w tabeli

Przekrój żył [mm^2]	Rezystancja żył roboczych [Ω/km]	Indukcyjność jednostkowa [mH/km]	Reaktancja indukcyjna [Ω/km]	Pojemność doziemna jednostkowa [µF/km]	Obciążalność zwarciowa [kA]	Obciążalność długotrwała [A]
16	1,15	0,39	0,124	0,20	2,29	112
25	0,727	0,37	0,117	0,23	3,58	146
35	0,524	0,36	0,113	0,25	5,01	174
50	0,387	0,34	0,106	0,27	7,15	208
70	0,268	0,32	0,100	0,33	10,01	261
95	0,193	0,30	0,096	0,37	13,59	316
120	0,153	0,30	0,094	0,41	17,16	365
150	0,124	0,29	0,090	0,45	21,45	414
185	0,0991	0,28	0,088	0,49	26,46	472
240	0,0754	0,28	0,086	0,54	34,32	557

BITNER ZAKŁADY KABLOWE

Współczynniki poprawkowe dla energetycznych kabli górniczych 3,6/6 kV

Współczynnik poprawkowy Kt dla kabli o żyłach miedzianych, **izolacji PVC** na napięcie 3,6/6 kV dla temperatury otoczenia powyżej 25°C

Temperatura otoczenia [°C]	Współczynnik poprawkowy Kt
30	0,94
35	0,88
40	0,82
45	0,75
50	0,67
55	0,58

Gęstość prądu zwarciowego przy zwarciu jednosekundowym dla kabli o żyłach miedzianych, **izolacji PVC** na napięcie 3,6/6 kV w zależności od temperatury żyły roboczej w momencie wystąpienia zwarcia. Dopuszczalna temperatura żyły roboczej podczas zwarcia 160°C.

Temperatura żyły w chwili wystąpienia zwarcia [°C]	Gęstość prądu zwarciowego [A/mm^2]
20	150
25	147
30	143
35	140
40	136
45	133
50	129
55	126
60	122
65	119
70	115

Współczynniki poprawkowe dla energetycznych kabli górniczych 3,6/6 kV

Współczynnik poprawkowy Kt dla kabli o żyłach miedzianych, **izolacji XLPE** na napięcie 3,6/6 kV dla temperatury otoczenia powyżej 25°C

Temperatura otoczenia [°C]	Współczynnik poprawkowy Kt
30	0,96
35	0,92
40	0,88
45	0,83
50	0,78
55	0,73

W przypadku ułożenia kabli równolegle nad sobą na wspornikach, wartość obciążalności długotrwałej dla poszczególnych kabli należy pomnożyć przez współczynnik poprawkowy Kg wg tabeli.
Podane w tabeli wartości współczynnika Kg dotyczą ułożenia kabli w odległości co najmniej 2 cm od ściany.
Odstęp między kablami jest równy co najmniej ich średnicy.
Dla odległości między kablami większej niż 15 cm, współczynnik Kg nie jest wymagany.

Liczba kabli ułożonych pionowo	Współczynnik poprawkowy Kg
2	0,93
3	0,90
6	0,87
9	0,86

Gęstość prądu zwarciowego przy zwarciu jednosekundowym dla kabli o żyłach miedzianych, **izolacji XLPE** na napięcie 3,6/6 kV w zależności od temperatury żyły roboczej w chwili wystąpienia zwarcia. Dopuszczalna temperatura żyły roboczej podczas zwarcia 250°C.

Temperatura żyły w chwili wystąpienia zwarcia [°C]	Gęstość prądu zwarciowego [A/mm^2]
20	181
25	179
30	176
35	173
40	170
45	168
50	165
55	162
60	159
65	157
70	154
75	151
80	148
85	146
90	143

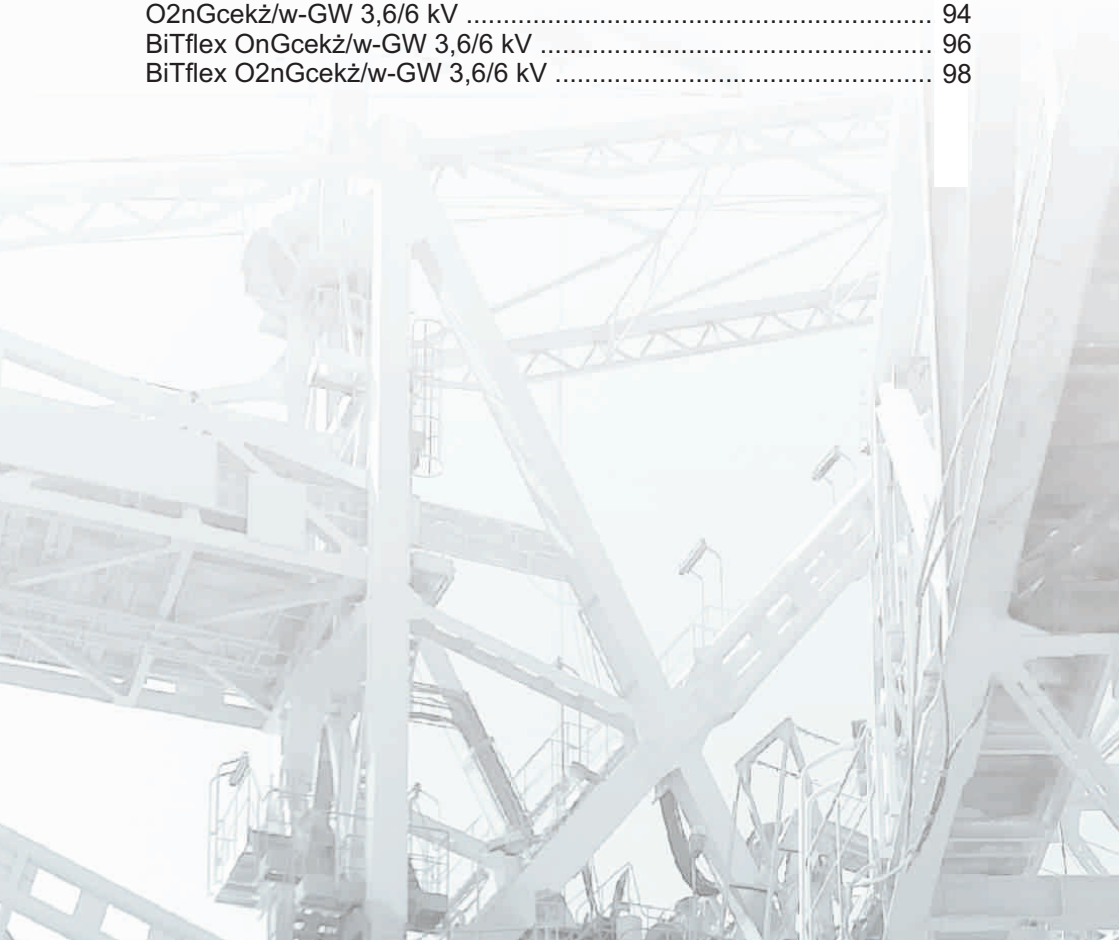
Dobór kabli przy uwzględnieniu obciążalności zwarciowej powinien być wykonany z uwzględnieniem zależności:

$$Smin = \frac{Itz\sqrt{tz}}{Jd1}$$

Smin - minimalny przekrój żyły roboczej kabla [mm2]
Itz - zastępczy prąd zwarciowy [A]
tz - czas trwania zwarcia [s]
Jd1 - dopuszczalna gęstość prądu zwarciowego [A/mm2]

CHAPTER IV

MEDIUM VOLTAGE SHEATHED CABLES



OnGcekgż - G 3,6/6 kV

Screened rubber insulated and sheathed mining cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining cable with cooper conductors in in heat-resistant rubber insulation and oil-resistant rubber sheath resistant to flame propagation, individually screened with semi-conductive rubber.
Operating temperature: -40°C to 90°C
Operating voltage: 3,6/6 kV
Test voltage: 11 kV
Min. bending radius:
6 -x Ø for permanent installation
Max. winding and unwinding speed:
max. 60 m/min, at minimum drum diameter of 12 x Ø, where Ø - cable OD
Max. tensile force:
F_{dop} = 15*S [N] , where S sum of cable power conductor cross sections

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductor, divided into 3 parts: GP conductive rubber acc. PN-89/E-29100
Core: GP conductive rubber acc. PN-89/E-29100
Stranding element lapping: semi-conductive tape
Outer sheath: ON4 rubber acc. PN-89/E-29100
Sheath colour: red or black

Application:

Cables intended for installation in power systems and for supplying high-power machinery in strip and open-pit mines.

Sample cable marking:
OnGcekgż - G 3x25 + 3x16/3 mm^2
3,6/6kV - 4-conductor cable with nominal power conductor cross section 25 mm^2 and protective conductor 16 mm^2, voltage rating: 3,6/6 kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Number and conductor cross section [nxmm^2]	nominal conductor cross section		Calculated outer diameter [mm]	Calculated cable weight [kg/km]
		power [mm^2]	protective [mm^2]		
GG5100	3x10+3x10/3	10	10	37,3	1700
GG5101	3x16+3x16/3	16	16	39,7	2000
GG5102	3x25+3x16/3	25	16	42,5	2400
GG5103	3x35+3+16/3	35	16	45,1	2850
GG5104	3x50+3x25/3	50	25	49,7	3750
GG5105	3x70+3+35/3	70	35	53,9	4550
GG5106	3x95+3x50/3	95	50	57,3	5700
GG5107	3x120+3x70/3	120	70	64,3	7150
GG5108	3x150+3x70/3	150	70	65,2	8300
GG5109	3x185+3x95/3	185	95	70,7	10150

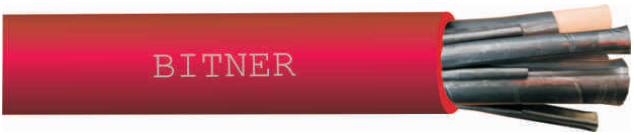
BITNER Cable Factory reserves the right to modify specifications without prior notification.

Conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Long-term current carrying capacity [A]	Unit capacitance [µF/km]
10	1,95	0,42	84	0,30
16	1,24	0,39	109	0,34
25	0,795	0,37	141	0,39
35	0,565	0,34	174	0,44
50	0,393	0,33	215	0,49
70	0,277	0,31	266	0,56
95	0,210	0,30	318	0,64
120	0,164	0,29	367	0,69
150	0,132	0,28	418	0,77
185	0,108	0,27	477	0,84

BITNER CABLE FACTORY

OnGcekgż - G 6/10 kV

Screened rubber insulated and sheathed mining cable



RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining cable with cooper conductors in heat-resistant rubber insulation and oil-resistant rubber sheath, resistant to flame propagation, individually screened with semi-conductive rubber
Operating temperature: -40°C to 90°C
Operating voltage: 6/10 kV
Test voltage: 17 kV
Min. bending radius:
6 x Ø for permanent installation
12 x Ø for portable devices
Max. winding and unwinding speed:
max. 60 m/min, at 60 m/min, at minimum drum diameter of 12 x Ø, where Ø - cable OD
Max. tensile force:
F_{dop} = 15*S [N] , where S sum of cable power conductor cross sections

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductor, divided into 3 parts: conductive rubber acc. PN-89/E-29100
Core: conductive rubber acc. PN-89/E-29100
Stranding element lapping: semi-conductive tape
Outer sheath: ON4 rubber acc. PN-89/E-29100
Sheath colour: red or black

Application:

Cables intended for installation in power systems and for supplying high-power machinery in strip and open-pit mines.

Sample cable marking:
OnGcekgż - G 3x25 + 3x16/3 mm^2 6/10kV - 4-conductor cable with nominal power conductor cross section 25 mm^2 and protective conductor 16 mm^2, voltage rating: 6/10 kV.


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Number and conductor cross section [nxmm^2]	nominal conductor cross section		Calculated outer diameter [mm]	Calculated cable weight [kg/km]
		power [mm^2]	protective [mm^2]		
GG8000	3x10+3x10/3	10	10	39,0	1800
GG8001	3x16+3x16/3	16	16	41,4	2150
GG8002	3x25+3x16/3	25	16	42,0	2550
GG8003	3x35+3+16/3	35	16	44,0	3100
GG8004	3x50+3x25/3	50	25	48,4	3970
GG8005	3x70+3+35/3	70	35	52,3	4900
GG8006	3x95+3x50/3	95	50	56,9	6300
GG8007	3x120+3x70/3	120	70	59,5	7300
GG8008	3x150+3x70/3	150	70	65,0	8800
GG8009	3x185+3x95/3	185	95	70,0	10800

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Long-term current carrying capacity [A]	Unit capacitance [µF/km]
10	1,95	0,44	84	0,27
16	1,24	0,40	109	0,31
25	0,795	0,38	141	0,35
35	0,565	0,35	174	0,40
50	0,393	0,34	215	0,44
70	0,277	0,32	266	0,50
95	0,210	0,30	318	0,58
120	0,164	0,29	367	0,62
150	0,132	0,28	418	0,69
185	0,108	0,27	477	0,76

OnGcekgż - G 8,7/15 kV

Screened rubber insulated and sheathed mining cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining cable with cooper conductors in heat-resistant rubber insulation and oil-resistant rubber sheath, resistant to flame propagation, individually screened with semi-conductive rubber
Operating temperature: -40°C to 90°C
Operating voltage: 8,7/15 kV
Test voltage: 24 kV
Min. bending radius:
6 -x Ø for permanent installation
12 x Ø for portable devices
Max. winding and unwinding speed: max. 60 m/min, at 60 m/min, at minimum drum diameter of 12 x Ø, where Ø - cable OD
Max. tensile force:
F_{dop} = 15*S [N] , where S sum of cable power conductor cross sections

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductor, divided into 3 parts: conductive rubber acc. PN-89/E-29100
Core: conductive rubber acc. PN-89/E-29100
Stranding element lapping: semi-conductive tape
Outer sheath: ON4 rubber acc. PN-89/E-29100
Sheath colour: red or black

Application:

Cables intended for installation in power systems and for supplying high-power machinery in strip and open-pit mines.

Sample cable marking:
OnGcekgż - G 3x25 + 3x16/3 mm^2
8,7/15kV - 4-conductor cable with nominal power conductor cross section 25 mm^2 and protective conductor 16 mm^2, voltage rating: 8,7/15 kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Number and conductor cross section [nxmm^2]	nominal conductor cross section		Calculated outer diameter [mm]	Calculated cable weight [kg/km]
		power [mm^2]	protective [mm^2]		
GG8500	3x10+3x10/3	10	10	44,0	2150
GG8501	3x16+3x16/3	16	16	46,5	2500
GG8502	3x25+3x16/3	25	16	49,0	3100
GG8503	3x35+3+16/3	35	16	49,7	3700
GG8504	3x50+3x25/3	50	25	53,2	4500
GG8505	3x70+3+35/3	70	35	58,0	5700
GG8506	3x95+3x50/3	95	50	61,7	7000
GG8507	3x120+3x70/3	120	70	65,0	8150
GG8508	3x150+3x70/3	150	70	71,0	9450
GG8509	3x185+3x95/3	185	95	74,8	11480

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Long-term current carrying capacity [A]	Unit capacitance [µF/km]
10	1,95	0,47	85	0,23
16	1,24	0,44	110	0,26
25	0,795	0,40	142	0,29
35	0,565	0,38	174	0,32
50	0,393	0,36	215	0,36
70	0,277	0,34	265	0,40
95	0,210	0,32	318	0,46
120	0,164	0,31	365	0,49
150	0,132	0,30	415	0,54
185	0,108	0,29	474	0,60

BITNER CABLE FACTORY

OnGcekgż - G 12/20 kV

Screened rubber insulated and sheathed mining cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining cable with cooper conductors in heat-resistant rubber insulation and oil-resistant rubber sheath, resistant to flame propagation, individually screened with semi-conductive rubber
Operating temperature: -40°C to 90°C
Operating voltage: 12/20 kV
Test voltage: 29 kV
Min. bending radius:
6 x Ø for permanent installation
12 x Ø for portable devices
Max. winding and unwinding speed: max. 60 m/min, at 60 m/min, at minimum drum diameter of 12 x Ø, where Ø - cable OD
Max. tensile force:
F_{dop} = 15*S [N] , where S sum of cable power conductor cross sections

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductor, divided into 3 parts: conductive rubber acc. PN-89/E-29100
Core: conductive rubber acc. PN-89/E-29100
Stranding element lapping: semi-conductive tape
Outer sheath: ON4 rubber acc. PN-89/E-29100
Sheath colour: red or black

Application:

Cables intended for installation in power systems and for supplying high-power machinery in strip and open-pit mines.

Sample cable marking:
OnGcekgż - G 3x25 + 3x16/3 mm^2
12/20kV - 4-conductor cable with nominal power conductor cross section 25 mm^2 and protective conductor 16 mm^2, voltage rating: 12/20 kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Number and conductor cross section [nxmm^2]	nominal conductor cross section		Calculated outer diameter [mm]	Calculated cable weight [kg/km]
		power [mm^2]	protective [mm^2]		
GG9000	3x10+3x10/3	10	10	49,1	2600
GG9001	3x16+3x16/3	16	16	51,5	3100
GG9002	3x25+3x16/3	25	16	53,0	3500
GG9003	3x35+3+16/3	35	16	54,0	4200
GG9004	3x50+3x25/3	50	25	58,5	5200
GG9005	3x70+3+35/3	70	35	62,3	6350
GG9006	3x95+3x50/3	95	50	67,0	7500
GG9007	3x120+3x70/3	120	70	71,0	8750
GG9008	3x150+3x70/3	150	70	75,8	9900
GG9009	3x185+3x95/3	185	95	78,2	12050

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Long-term current carrying capacity [A]	Unit capacitance [µF/km]
10	1,95	0,49	85	0,20
16	1,24	0,45	111	0,22
25	0,795	0,42	143	0,25
35	0,565	0,40	175	0,28
50	0,393	0,38	215	0,31
70	0,277	0,35	265	0,35
95	0,210	0,33	317	0,39
120	0,164	0,33	364	0,42
150	0,132	0,31	414	0,46
185	0,108	0,30	471	0,51

OnGcekgż - G 18/30 kV

Screened rubber insulated and sheathed mining cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining cable with cooper conductors in heat-resistant rubber insulation and oil-resistant rubber sheath, resistant to flame propagation, individually screened with semi-conductive rubber
Operating temperature: -40°C to 90°C
Operating voltage: 18/30 kV
Test voltage: 43 kV
Min. bending radius:
6 x Ø for permanent installation
12 x Ø for portable devices
Max. winding and unwinding speed: max. 60 m/min, at 60 m/min, at minimum drum diameter of 12 x Ø, where Ø - cable OD
Max. tensile force:
F_{dop} = 15*S [N] , where S sum of cable power conductor cross sections

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductor, divided into 3 parts: conductive rubber acc. PN-89/E-29100
Core: conductive rubber acc. PN-89/E-29100
Stranding element lapping: semi-conductive tape
Outer sheath: ON4 rubber acc. PN-89/E-29100
Sheath colour: red or black

Application:

Cables intended for installation in power systems and for supplying high-power machinery in strip and open-pit mines.

Sample cable marking:
OnGcekgż - G 3x25 + 3x16/3 mm^2
18/30kV - 4-conductor cable with nominal power conductor cross section 25 mm^2 and protective conductor 16 mm^2, voltage rating: 18/30 kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Number and conductor cross section [nxmm^2]	nominal conductor cross section		Calculated outer diameter [mm]	Calculated cable weight [kg/km]
		power [mm^2]	protective [mm^2]		
GG9500	3x25+3x16/3	25	16	64,0	5100
GG9501	3x35+3+16/3	35	16	65,8	5800
GG9502	3x50+3x25/3	50	25	70,2	6900
GG9503	3x70+3+35/3	70	35	74,1	8100
GG9504	3x95+3x50/3	95	50	78,7	9700

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Unit inductivity [mH/km]	Long-term current carrying capacity [A]	Unit capacitance [µF/km]
25	0,795	0,47	144	0,20
35	0,565	0,44	176	0,22
50	0,393	0,42	215	0,24
70	0,277	0,39	265	0,27
95	0,210	0,37	315	0,30

BITNER CABLE FACTORY

OGc 3,6/6 kV

Rubber insulated and sheathed cable
for mobile and portable mining equipment

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Screened and sheathed mining cable with cooper conductors in heat-resistant rubber insulation and rubber sheath with increased mechanical strength

Operating temperature: -40°C to 90°C
Operating voltage: 3,6/6 kV
Test voltage: 11 kV
Min. bending radius:
6 x Ø for permanent installation
12 x Ø for portable devices

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductors: GP conductive rubber acc. PN-89/E-29100
Core: GP conductive rubber acc. PN-89/E-29100
Stranding element: screened power conductors and protective conductors in gaps between the power conductors, stranded around the core
Lapping: conductive tape
Outer sheath: OZ-3 rubber acc. PN-89/E-29100
Sheath colour: black

Application:

Cables intended for supplying mobile and portable mining equipment in strip and open-pit mines.

Sample cable marking:
OGc 3x50 + 3x10 mm^2 3,6/6kV cable with three power conductors with nominal cross section 50 mm^2 and three protective conductor cross section 10 mm^2, voltage rating: 3,6/6 kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Number and conductor cross section [nxmm^2]	nominal conductor cross section		Calculated outer diameter [mm]	Calculated cable weight [kg/km]
		power [mm^2]	protective [mm^2]		
GG5200	3 x 16+3 x 6	16	3 x 6	50,0	2600
GG5201	3 x 25+3 x 6	25	3 x 6	54,9	3100
GG5202	3 x 35+3 x 6	35	3 x 6	60,2	3900
GG5203	3 x 50+3 x 10	50	3 x 10	63,5	4700
GG5204	3 x 70+3 x 16	70	3 x 16	69,0	5800
GG5205	3 x 95+3 x 16	95	3 x 16	72,1	6750

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Power conductor cross section [mm^2]	Max. control conductor resistance [Ω/km]	Unit inductivity [mH/km]	Unit inductive reactance [Ω/km]	Unit capacitance to earth [μF/km]	Unit to-earth short circuit current [A/km]	Long-term current carrying capacity at max. 25°C [A]
16	111	0,39	1,240	0,25	0,82	121
25	143	0,37	0,116	0,28	0,91	161
35	175	0,35	0,110	0,32	1,04	195
50	215	0,34	0,107	0,35	1,14	242
70	265	0,32	0,101	0,40	1,31	269
95	317	0,30	0,094	0,45	1,47	356

OnGcrekgż-G(S) 3,6/6 kV

Medium voltage sheathed cables

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Cable with cooper conductors in PE rubber insulation with reduced thickness and non-flammable rubber sheath, individually screened with semi-conductive rubber, mining design, for permanent installation
Operating temperature: -40°C to 90°C
Operating voltage: 3,6/6 kV
Test voltage: 11 kV
Min. bending radius:
6 x Ø for permanent installation
12 x Ø for portable devices

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductors: GP conductive rubber acc. PN-89/E-29100
Core: GP conductive rubber acc. PN-89/E-29100
Stranding element: screened power conductors and protective conductors in gaps between the power conductors, stranded around the core
Lapping: conductive tape
Outer sheath: ON4 rubber acc. PN-89/E-29100
Sheath colour: red

Application:

Medium voltage sheathed cable for permanent installation on excavators, reclaimers and along stationary and movable conveyor belts, for installation in electric power systems, in strip and open-pit mines.

Sample cable marking: OnGcrekgż-G(S) 3x70+3x35/3 3,6/6 kV - 4-conductor cable with nominal cross section of power conductor 70 mm^2 and protective conductor 35 mm^2, voltage rating: 3,6/6 kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Nominal conductor cross section		Calculated outer diameter	Calculated cable weight	Max. control conductor resistance: at 20°C	Current carrying capacity at 25°C	Unit inductivity	Unit capacitance to earth
	power [mm^2]	protective [mm^2]	[mm]	[kg/km]	[Ω/km]	[A]	[mH/km]	[µF/km]
GG5300	10	10	33,7	1580	1,95	82	0,38	0,36
GG5301	16	16	35,7	1900	1,24	107	0,34	0,42
GG5302	25	16	40,9	2600	0,795	139	0,31	0,48
GG5303	35	16	43,1	2900	0,565	172	0,30	0,54
GG5304	50	25	46,5	3700	0,393	215	0,28	0,61
GG5305	70	35*	51,2	4800	0,277	266	0,27	0,70
GG5306	95	50**	54,8	6000	0,210	320	0,26	0,80
GG5307	120	70	57,8	6900	0,164	374	0,25	0,87
GG5308	150	70	62,7	8100	0,132	430	0,25	0,97
GG5309	185	95	67,5	9650	0,108	491	0,24	1,07

* it is permissible to make three components of 10 mm^2 cross section each
** it is permissible to make three components of 16 mm^2 cross section each

BITNER CABLE FACTORY

OnGcrekgż-G(S) 6/10 kV

Medium voltage sheathed cables

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Cable with cooper conductors in PE rubber insulation of reduced thickness and non-flammable rubber sheath, individually screened with semi-conductive rubber, mining design, for permanent installation

Operating temperature: -40°C to 90°C
Operating voltage: 6/10 kV
Test voltage: 17 kV
Min. bending radius:
6 x Ø for permanent installation
12 x Ø for portable devices

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductors: GP conductive rubber acc. PN-89/E-29100
Core: GP conductive rubber acc. PN-89/E-29100
Stranding element: screened power conductors and protective conductors in gaps between the power conductors, stranded around the core
Lapping: conductive tape
Outer sheath: ON4 rubber acc. PN-89/E-29100
Sheath colour: red.

Application:

Medium voltage sheathed cable for permanent installation on excavators, reclaimers and along stationary and movable conveyor belts, for installation in electric power systems, in strip and open-pit mines.

Sample cable marking: OnGcrekgż-G(S) 3x70+3x35/3 6/10 kV - 4-conductor cable with nominal cross section of power conductor 70 mm^2 and protective conductor 35 mm^2, voltage rating: 6/10 kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Nominal conductor cross section		Calculated outer diameter	Calculated cable weight	Max. control conductor resistance: at 20°C	Current carrying capacity at 25°C	Unit inductivity	Unit capacitance to earth
	power [mm^2]	protective [mm^2]	[mm]	[kg/km]	[Ω/km]	[A]	[mH/km]	[μF/km]
GG8100	10	10	35,4	1700	1,95	82	0,41	0,32
GG8101	16	16	37,4	2000	1,24	107	0,38	0,37
GG8102	25	16	42,6	2700	0,795	139	0,36	0,42
GG8103	35	16	44,8	3100	0,565	172	0,34	0,48
GG8104	50	25	48,2	3850	0,393	215	0,32	0,53
GG8105	70	35*	52,9	4990	0,277	266	0,30	0,61
GG8106	95	50**	56,5	6150	0,210	320	0,29	0,70
GG8107	120	70	59,5	7110	0,164	374	0,28	0,75
GG8108	150	70	64,5	8300	0,132	430	0,27	0,84
GG8109	185	95	69,2	9850	0,108	491	0,26	0,93

* it is permissible to make three components of 10 mm^2 cross section each
** it is permissible to make three components of 16 mm^2 cross section each

OnGcrekgż-G(Z) 3,6/6 kV

Medium voltage sheathed cables

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Cable with cooper conductors in PE rubber insulation, reduced thickness, non-flammable rubber sheath, individually screened with semi-conductive rubber, mining design, for winding and unwinding
Operating temperature: -40°C to 90°C
Operating voltage: 3,6/6 kV
Test voltage: 11 kV
Min. bending radius:
6 x Ø for permanent installation
12 x Ø for portable devices

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductors: GP conductive rubber acc. PN-89/E-29100
Core: GP conductive rubber acc. PN-89/E-29100
Stranding element: screened power conductors and protective conductors in gaps between the power conductors, stranded around the core
Lapping: conductive tape
Two-layer outer sheath: ON4 type rubber acc. PN-89/E-29100, reinforced with synthetic fibre
Sheath colour: red.

Application:

Medium voltage sheathed cables for installation on excavators, reclaimers and along conveyor belts, for continued winding and unwinding, in electric power systems, in strip and open-pit mines.

Sample cable marking: OnGcrekgż-G(Z) 3x70+3x35/3 3,6/6 kV - 4-conductor cable with nominal cross section of power conductor 70 mm^2 and protective conductor 35mm^2, voltage rating: 3,6/6 kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Nominal conductor cross section		Calculated outer diameter	Calculated cable weight	Max. control conductor resistance: at 20°C	Current carrying capacity at 25°C	Unit inductivity	Unit capacitance to earth
	power [mm^2]	protective [mm^2]	[mm]	[kg/km]	[Ω/km]	[A]	[mH/km]	[µF/km]
GG5400	10	10	33,7	1560	1,95	82	0,38	0,36
GG5401	16	16	35,7	1880	1,24	107	0,34	0,42
GG5402	25	16	41,1	2630	0,795	139	0,31	0,48
GG5403	35	16	43,3	2950	0,565	172	0,30	0,54
GG5404	50	25	46,7	3675	0,393	215	0,28	0,61
GG5405	70	35*	51,2	4777	0,277	266	0,27	0,70
GG5406	95	50**	56,0	6070	0,210	320	0,26	0,80
GG5407	120	70	58,6	6966	0,164	374	0,25	0,87
GG5408	150	70	63,5	8140	0,132	430	0,25	0,97
GG5409	185	95	70,1	9957	0,108	491	0,24	1,07

* it is permissible to make three components of 10 mm^2 cross section each
** it is permissible to make three components of 16 mm^2 cross section each

BITNER CABLE FACTORY

OnGcrekgż-G(Z) 6/10 kV

Medium voltage sheathed cables

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Cable with cooper conductors in PE rubber insulation, reduced thickness, non-flammable rubber sheath, individually screened with semi-conductive rubber, mining design, for winding and unwinding
Operating temperature: -40°C to 90°C
Operating voltage: 6/10 kV
Test voltage: 17 kV
Min. bending radius:
6 x Ø for permanent installation
12 x Ø for portable devices

Construction:

Power and protective conductors: tin-plated cooper, multi-stranded class 5 acc. PN-EN 60228
Screen on power conductors: GP conductive rubber acc. PN-89/E-29100
Power conductor insulation: EP rubber with increased electrical performance
Power conductor colours: natural
Screen on power and protective conductors: GP conductive rubber acc. PN-89/E-29100
Core: GP conductive rubber acc. PN-89/E-29100
Stranding element: screened power conductors and protective conductors in gaps between the power conductors, stranded around the core
Lapping: conductive tape
Two-layer outer sheath: ON4 type rubber acc. PN-89/E-29100, reinforced with synthetic fibre
Sheath colour: red.

Application:

Medium voltage sheathed cables for installation on excavators, reclaimers and along conveyor belts, for continued winding and unwinding, in electric power systems, in strip and open-pit mines.

Sample cable marking: OnGcrekgż-G(Z) 3x70+3x35/3 6/10 kV- 4-conductor cable with nominal cross section of power conductor 70 mm^2 and protective conductor 35 mm^2, voltage rating: 6/10 kV


mining applications


high flexibility

non-flammable sheath


oil-resistant


UV resistant

Cat. no.	Nominal conductor cross section		Calculated outer diameter	Calculated cable weight	Max. control conductor resistance: at 20°C	Current carrying capacity at 25°C	Unit inductivity	Unit capacitance to earth
	power [mm^2]	protective [mm^2]	[mm]	[kg/km]	[Ω/km]	[A]	[mH/km]	[μF/km]
GG8200	10	10	35,4	1690	1,95	82	0,41	0,32
GG8201	16	16	37,4	2020	1,24	107	0,38	0,37
GG8202	25	16	42,8	2740	0,795	139	0,36	0,42
GG8203	35	16	45,0	3110	0,565	172	0,34	0,48
GG8204	50	25	48,4	3850	0,393	215	0,32	0,53
GG8205	70	35*	52,9	4960	0,277	266	0,30	0,61
GG8206	95	50**	57,7	6280	0,210	320	0,29	0,70
GG8207	120	70	60,3	7180	0,164	374	0,28	0,75
GG8208	150	70	65,3	8380	0,132	430	0,27	0,84
GG8209	185	95	70,8	10050	0,108	491	0,26	0,93

* it is permissible to make three components of 10 mm^2 cross section each
** it is permissible to make three components of 16 mm^2 cross section each

OnGcekż/w-GW 3,6/6 kV

Double-screened rubber insulated and sheathed mining cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining cable with cooper conductors in heat-resistant rubber insulation and outer sheath made of oil-resistant rubber, resistant to flame propagation , with individually screened conductors, common screen, longitudinal sealing
Max. operating temperature: 90°C
Operating voltage: 3,6/6 kV
Test voltage:
power conductors: 11 kV AC and 26,4 kV DC
control conductors: 2 kV AC and 4,8 kV DC
Min. bending radius: 6 x Ø for permanent installation
10 x Ø for portable devices

Construction:

Power and control conductors: cooper, tin-plated, multi-stranded class 5 acc. PN- EN 60228
Protective conductor: combined power and control conductor screening
Power and control conductor insulation: EPR rubber with increased electrical performance
Conductor colours:
4 - conductor cables: power conductors: natural, red, blue
7 - conductor cables: power conductors: natural, red, blue
control conductors: natural, red, blue
10 - conductor cables: power conductors: natural, red, blue
control conductors: 2 x blue, 2 x natural, 2 x red
Conductor screen:
non-metallic screen: semi-conductive tape and semi-conductive rubber
metallic screen: tin-plated cooper wire braid, with synthetic thread of min. 65 % covering capacity
Triple separator and liners: semi-conductive rubber
Stranding element:
4-conductor cables: three insulated and screened power conductors and three components of the protective conductor, between power conductor, stranded around filling liner
7-conductor cables: three insulated and screened power conductors stranded on a rubber separator and a set of control and protective conductors between the power conductors
The set of control and protective conductors comprises rubber liner, control conductor made as a braid or lapping of tin-plated cooper wires, control conductor insulation, protective conductor made as a braid or lapping of tin-plated cooper wires on the control conductor insulation.
10-conductor cables: three insulated and screened power conductors stranded on a rubber separator and 3 sets of control and protective conductors between the power conductors
The set of control and protective conductors comprises two insulated control conductors stranded together, sheathed, lapping of semi-conductive tape and protective conductor in the form of tin-plated cooper wire braid.
Inner sheath: ON5 rubber sheath acc. PN-89/E-29100
Common screen:
non-metallic screen: semi-conductive tape lapping
metallic screen: tin-plated cooper wire braid, with synthetic thread of geometrical cross section of cooper wires at least 6 mm^2
Longitudinal seal: tape swelling in water and moisture of min. 5 mm swelling height
Outer sheath: ON4 rubber acc. PN-89/E-29100
Sheath colour: red

Application:

Cables for supplying mobile and portable devices operating underground in mines, under conditions of continual winding and unwinding. Intended for installation in electric power systems of underground mines, in methane and non-methane areas, and excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B” coal dust explosion hazard.

Sample cable marking: OnGcekż/w - GW 3x95 + 35 + 3x2x4 mm^2 3,6/6kV - 10-conductor cable with nominal cross section of power conductor 95 mm^2, protective conductor 35 mm^2 and control conductor 4 mm^2, voltage rating: 3,6/6 kV

mining applications | high flexibility | PN-EN60332-1 | non-flammable sheath | for potentially explosive areas | oil-resistant | UV resistant

BITNER CABLE FACTORY

OnGcekż/w-GW 3,6/6 kV

Double-screened rubber insulated and sheathed mining cable

Cat. no.	Number and conductor cross section [nxmm²]	conductors	nominal conductor cross section		
			power [mm²]	protective [mm²]	control [mm²]
GG5600	3x25+16	4	25	16	
GG5601	3x35+16		35	16	
GG5602	3x50+25		50	25	
GG5603	3x70+25		70	25	
GG5604	3x95+35		95	35	
GG5605	3x120+35		120	35	
GG5606	3x25+16+3x2,5	7	25	16	2,5
GG5607	3x35+16+3x2,5		35	16	2,5
GG5608	3x50+25+3x2,5		50	25	2,5
GG5609	3x70+25+3x4		70	25	4
GG5610	3x95+35+3x4		95	35	4
GG5611	3x120+35+3x4		120	35	4
GG5612	3x25+16+3x2x2,5	10	25	16	2,5
GG5613	3x35+16+3x2x2,5		35	16	2,5
GG5614	3x50+25+3x2x2,5		50	25	2,5
GG5615	3x70+25+3x2x4		70	25	4
GG5616	3x70+25+3x2x6		70	25	6
GG5617	3x95+35+3x2x4		95	35	4
GG5618	3x95+35+3x2x6		95	35	6
GG5619	3x120+35+3x2x4		120	35	4
GG5620	3x120+35+3x2x6		120	35	6

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Power conductor cross section [mm²]	Power conductor resistance [Ω/km]	Current carrying capacity [A]	Unit inductivity [mH/km]	Unit inductive reactance [Ω/km]	Unit capacitance to earth [μF/km]	Unit short-circuit to earth current [A/km]
25	0,795	146	0,366	0,115	0,30	0,99
35	0,565	180	0,343	0,108	0,35	1,15
50	0,393	222	0,327	0,103	0,40	1,29
70	0,277	275	0,310	0,097	0,46	1,49
95	0,210	328	0,294	0,092	0,53	1,73
120	0,164	379	0,286	0,090	0,57	1,87

O2nGcekż/w-GW 3,6/6 kV

Double-screened rubber insulated and sheathed mining cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Mining cable with cooper conductors in heat-resistant rubber insulation and two-layer outer sheath made of non-flammable rubber, with synthetic reinforcing braid, individually screened conductors and common screen of cooper wires, longitudinal sealing
Max. operating temperature: 90°C
Operating voltage: 3,6/6 kV
Test voltage:
power conductors: 11 kV AC and 26,4 kV DC
control conductors: 2 kV AC and 4,8 kV DC
Min. bending radius: 6 x Ø for permanent installation
10 x Ø for portable devices

Construction:

Power and control conductors: cooper, tin-plated, multi-stranded class 5 acc. PN- EN 60228
Protective conductor: combined power and control conductor screening
Power and control conductor insulation: EPR rubber with increased electrical performance
Conductor colours::
4 - conductor cables: power conductors: natural, red, blue
7 - conductor cables: power conductors: natural, red, blue
control conductors: natural, red, blue
10-conductor cables: power conductors: natural, red, blue
control conductors: 2 x blue, 2 x natural, 2 x red
Conductor screen:
non-metallic screen: semi-conductive tape and semi-conductive rubber
metallic screen: tin-plated cooper wire braid, with synthetic thread of min. 65 % covering capacity
Triple separator and liners: semi-conductive rubber
Stranding element:
4-conductor cables: three insulated and screened power conductors and three components of the protective conductor, between power conductor, stranded around filling liner
7-conductor cables: three insulated and screened power conductors, stranded on a rubber separator and a set of control and protective conductors between the power conductors
The set of control and protective conductors comprises rubber liner, control conductor made as a braid or lapping of tin-plated cooper wires, control conductor insulation, protective conductor made as a braid or lapping of tin-plated cooper wires on the control conductor insulation.
10-conductor cables: three insulated and screened power conductors stranded on a rubber separator and 3 sets of control and protective conductors between the power conductors
The set of control and protective conductors comprises two insulated control conductors stranded together, sheathed, lapping of semi-conductive tape and protective conductor in the form of tin-plated cooper wire braid.
Inner sheath: ON5 rubber sheath acc. PN-89/E-29100
Common screen:
non-metallic screen: semi-conductive tape lapping
metallic screen: tin-plated cooper wire braid, with synthetic thread of geometrical cross section of cooper wires at least 6 mm²
Longitudinal seal: tape swelling in water and moisture of min. 5 mm swelling height
Two-layer outer sheath: ON4 type rubber acc. PN-89/E-29100, reinforced with synthetic fibre
Sheath colour: red

Application:

Cables for supplying mobile and portable devices operating underground in mines, under conditions of continual winding and unwinding. Intended for installation in electric power systems of underground mines, in methane and non-methane areas, and excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B” coal dust explosion hazard.

Sample cable marking: O2nGcekż/w - GW 3x95 + 35 + 3x2x4 mm² 3,6/6kV - 10-conductor cable with nominal cross section of power conductor 95 mm², protective conductor 35 mm² and control conductor 4 mm², voltage rating: 3,6/6 kV

mining applications | high flexibility | PN-EN60332-1 | non-flammable sheath | for potentially explosive areas | oil-resistant | UV resistant

BITNER CABLE FACTORY

O2nGcekż/w-GW 3,6/6 kV

Double-screened rubber insulated and sheathed mining cable

Cat. no.	Number and conductor cross section [nxmm^2]	conductors	nominal conductor cross section		
			power [mm^2]	protective [mm^2]	control [mm^2]
GG5700	3x25+16	4	25	16	
GG5701	3x35+16		35	16	
GG5702	3x50+25		50	25	
GG5703	3x70+25		70	25	
GG5704	3x95+35		95	35	
GG5705	3x120+35		120	35	
GG5706	3x25+16+3x2,5	7	25	16	2,5
GG5707	3x35+16+3x2,5		35	16	2,5
GG5708	3x50+25+3x2,5		50	25	2,5
GG5709	3x70+25+3x4		70	25	4
GG5710	3x95+35+3x4		95	35	4
GG5711	3x120+35+3x4		120	35	4
GG5712	3x25+16+3x2x2,5	10	25	16	2,5
GG5713	3x35+16+3x2x2,5		35	16	2,5
GG5714	3x50+25+3x2x2,5		50	25	2,5
GG5715	3x70+25+3x2x4		70	25	4
GG5716	3x70+25+3x2x6		70	25	6
GG5717	3x95+35+3x2x4		95	35	4
GG5718	3x95+35+3x2x6		95	35	6
GG5719	3x120+35+3x2x4		120	35	4
GG5720	3x120+35+3x2x6		120	35	6

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Power conductor cross section [mm^2]	Power conductor resistance [Ω/km]	Current carrying capacity [A]	Unit inductivity [mH/km]	Unit inductive reactance [Ω/km]	Unit capacitance to earth [μF/km]	Unit short-circuit to earth current [A/km]
25	0,795	146	0,366	0,115	0,30	0,99
35	0,565	180	0,343	0,108	0,35	1,15
50	0,393	222	0,327	0,103	0,40	1,29
70	0,277	275	0,310	0,097	0,46	1,49
95	0,210	328	0,294	0,092	0,53	1,73
120	0,164	379	0,286	0,090	0,57	1,87

BiTflex OnGcekż/w-GW 3,6/6 kV

Screened rubber insulated and sheathed mining cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Ming cable with cooper conductors in heat-resistant rubber insulation and outer sheath of oil-resistant rubber, resistant to flame propagation, with individually screened conductors, common screen, reinforced with aramid fibre, longitudinal sealing
Max. operating temperature: 90°C
Operating voltage: 3,6/6 kV
Test voltage:
power conductors: 11 kV AC and 26,4 kV DC
control conductors: 2 kV AC and 4,8 kV DC
Min. bending radius: 2,3 x Ø

Construction:

Power conductors: cooper, tin-plated, multi-stranded class 6 acc. PN- EN 60228
Control conductors: cooper, tin-plated, multi-stranded class 5 acc. PN- EN 60228, reinforced with aramid strand
Protective conductor: combined power and control conductor screening
Power and control conductor insulation: EP rubber with increased electrical performance
Conductor colours:
4 - conductor cables: power conductors: natural, red, blue
7 - conductor cables: power conductors: natural, red, blue
control conductors: natural, red, blue
10-conductor cables: power conductors: natural, red, blue
control conductors: 2 x blue, 2 x natural, 2 x red
Conductor screen:
non-metallic screen: semi-conductive tape resistivity at 20°C max. 2000 Ω x cm and GP semi-conductive rubber acc. PN-E-29100
metallic screen: tin-plated cooper wire braid, diameter at least 0,3 mm, with synthetic thread of min. 65 % covering capacity
Triple separator and liners: GP semi-conductive rubber acc. PN-89/E-29100
Stranding element:
4-conductor cables: three insulated and screened power conductors and three non-insulated conductors -components of the protective conductor, between power conductors, stranded around filling liner
7-conductor cables: three insulated and screened power conductors stranded on a rubber separator and a set of control and protective conductors between the power conductors
The set of control and protective conductors comprises rubber liner reinforced with aramid, control conductor made as a braid or lapping of tin-plated cooper wires placed onto the liner, control conductor insulation, protective conductor made as a braid or lapping of tin-plated cooper wires on the control conductor insulation.
10-conductor cables: three insulated and screened power conductors stranded on a rubber separator and 3 sets of control and protective conductors between the power conductors
The set of control and protective conductors comprises two insulated control conductors stranded together, reinforced with aramid strands, sheathed, lapping of semi-conductive tape and protective conductor in the form of tin-plated cooper wire braid.
Inner sheath: special rubber mix, natural colour
Common screen:
non-metallic screen: semi-conductive tape lapping
metallic screen: tin-plated cooper wire braid, reinforced with aramid strands, of geometrical cross section of cooper wires at least 6 mm^2
Longitudinal seal: tape swelling in water and moisture of min. 5 mm swelling height
Outer sheath: special chloroprene rubber mix
Sheath colour: red

Application:

Cables for supplying mobile and portable devices operating underground in mines, under conditions of continual winding and unwinding. Intended for installation in electric power systems of underground mines, in methane and non-methane areas, and excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B” coal dust explosion hazard.

Sample cable marking: BiTflex OnGcekż/w - GW 3x95 + 35 + 3x2x4 mm^2 3,6/6kV - 10-conductor cable with nominal cross section of power conductor 95 mm^2, protective conductor 35 mm^2 and control conductor 4 mm^2, voltage rating: 3,6/6 kV


mining applications


high flexibility


PN-EN60332-1

non-flammable sheath

for potentially explosive areas


oil-resistant


UV resistant

BITNER CABLE FACTORY

BiTflex OnGcekż/w-GW 3,6/6 kV

Screened rubber insulated and sheathed mining cable

Cat. no.	Number and conductor cross section [nxmm²]	conductors	nominal conductor cross section		
			power [mm²]	protective [mm²]	control [mm²]
GG5000	3x25+16	4	25	16	
GG5001	3x35+16		35	16	
GG5002	3x50+25		50	25	
GG5003	3x70+25		70	25	
GG5004	3x95+35		95	35	
GG5005	3x120+35		120	35	
GG5006	3x25+16+3x2,5	7	25	16	2,5
GG5007	3x35+16+3x2,5		35	16	2,5
GG5008	3x50+25+3x2,5		50	25	2,5
GG5009	3x70+25+3x4		70	25	4
GG5010	3x95+35+3x4		95	35	4
GG5011	3x120+35+3x4		120	35	4
GG5012	3x25+16+3x2x2,5	10	25	16	2,5
GG5013	3x35+16+3x2x2,5		35	16	2,5
GG5014	3x50+25+3x2x2,5		50	25	2,5
GG5015	3x70+25+3x2x4		70	25	4
GG5016	3x70+25+3x2x6		70	25	6
GG5017	3x95+35+3x2x4		95	35	4
GG5018	3x95+35+3x2x6		95	35	6
GG5019	3x120+35+3x2x4		120	35	4
GG5020	3x120+35+3x2x6		120	35	6

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Power conductor cross section	Power conductor resistance	Current carrying capacity	Unit inductivity	Unit inductive reactance	Unit capacitance to earth	Unit short-circuit to earth current
[mm²]	[Ω/km]	[A]	[mH/km]	[Ω/km]	[µF/km]	[A/km]
25	0,795	146	0,366	0,115	0,30	0,99
35	0,565	180	0,343	0,108	0,35	1,15
50	0,393	222	0,327	0,103	0,40	1,29
70	0,277	275	0,310	0,097	0,46	1,49
95	0,210	328	0,294	0,092	0,53	1,73
120	0,164	379	0,286	0,090	0,57	1,87

BiTflex O2nGcekż/w-GW 3,6/6 kV

Double-screened rubber insulated and sheathed mining cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Ming cable with cooper conductors in heat-resistant rubber insulation and two-layer outer sheath of oil-resistant rubber, resistant to flame propagation, with reinforcing braid, individually screened conductors, common screen reinforced with aramid strands, longitudinal sealing
Max. operating temperature: 90°C
Operating voltage: 3,6/6 kV
Test voltage:
power conductors: 11 kV AC and 26,4 kV DC
control conductors; 2 kV AC and 4,8 kV DC
Min. bending radius: 2,3 x Ø

Construction:

Power conductors: cooper, tin-plated, multi-stranded class 6 acc. PN- EN 60228
Control conductors: cooper, tin-plated, multi-stranded class 5 acc. PN- EN 60228, reinforced with aramid strand
Protective conductor: combined power and control conductor screening
Power and control conductor insulation: EP rubber with increased electrical performance
Conductor colours:
4-conductor cables: power conductors: natural, red, blue
7-conductor cables: power conductors: natural, red, blue
control conductors: natural, red, blue
10-conductor cables: power conductors: natural, red, blue
control conductors: 2 x blue, 2 x natural, 2 x red
Conductor screen:
non-metallic screen: semi-conductive tape resistivity at 20°C max. 2000 Ωxcm and GP semi-conductive rubber acc. PN-E-29100
metallic screen: tin-plated cooper wire braid, diameter at least 0,3 mm, with synthetic thread of min. 65 % covering capacity
Triple separator and liners: GP semi-conductive rubber acc. PN-89/E-29100
Stranding element:
4-conductor cables: three insulated and screened power conductors and three non-insulated conductors -components of the protective conductor, between power conductors, stranded around filling liner
7-conductor cables: three insulated and screened power conductors stranded on a rubber separator and a set of control and protective conductors between the power conductors
The set of control and protective conductors comprises rubber liner reinforced with aramid, control conductor made as a braid or lapping of tin-plated cooper wires placed onto the liner, control conductor insulation, protective conductor made as a braid or lapping of tin-plated cooper wires on the control conductor insulation.
10-conductor cables: three insulated and screened power conductors stranded on a rubber separator and 3 sets of control and protective conductors between the power conductors
The set of control and protective conductors comprises two insulated control conductors stranded together, reinforced with aramid strands, sheathed, lapping of semi-conductive tape and protective conductor in the form of tin-plated cooper wire braid.
Inner sheath: special rubber mix, natural colour
Common screen:
non-metallic screen semi-conductive tape lapping
metallic screen: tin-plated cooper wire braid, reinforced with aramid strands, of geometrical cross section of cooper wires at least 6 mm^2
Longitudinal seal: tape swelling in water and moisture of min. 5 mm swelling height
Two-layer outer sheath: special chloroprene rubber mix reinforced with aramid strands
Sheath colour: red

Application:

Cables for supplying mobile and portable devices operating underground in mines, under conditions of continual winding and unwinding. Intended for installation in electric power systems of underground mines, in methane and non-methane areas, and excavation sites categorised as class “a”, “b” or “c” methane explosion hazard, and class “A”, “B” coal dust explosion hazard.

Sample cable marking: BiTflex O2nGcekż/w - GW 3x95 + 35 + 3x2x4 mm^2 3,6/6kV - 10-conductor cable with nominal cross section of power conductor 95 mm^2, protective conductor 35 mm^2 and control conductor 4 mm^2, voltage rating: 3,6/6 kV


mining applications


high flexibility


PN-EN60332-1

non-flammable sheath

for potentially explosive areas


oil-resistant


UV resistant

BITNER CABLE FACTORY

BiTflex O2nGcekż/w-GW 3,6/6 kV

Double-screened rubber insulated and sheathed mining cable

Cat. no.	Number and conductor cross section [nxmm²]	conductors	nominal conductor cross section		
			power [mm²]	protective [mm²]	control [mm²]
GG5500	3x25+16	4	25	16	
GG5501	3x35+16		35	16	
GG5502	3x50+25		50	25	
GG5503	3x70+25		70	25	
GG5504	3x95+35		95	35	
GG5505	3x120+35		120	35	
GG5506	3x25+16+3x2,5	7	25	16	2,5
GG5507	3x35+16+3x2,5		35	16	2,5
GG5508	3x50+25+3x2,5		50	25	2,5
GG5509	3x70+25+3x4		70	25	4
GG5510	3x95+35+3x4		95	35	4
GG5511	3x120+35+3x4		120	35	4
GG5512	3x25+16+3x2x2,5	10	25	16	2,5
GG5513	3x35+16+3x2x2,5		35	16	2,5
GG5514	3x50+25+3x2x2,5		50	25	2,5
GG5515	3x70+25+3x2x4		70	25	4
GG5516	3x70+25+3x2x6		70	25	6
GG5517	3x95+35+3x2x4		95	35	4
GG5518	3x95+35+3x2x6		95	35	6
GG5519	3x120+35+3x2x4		120	35	4
GG5520	3x120+35+3x2x6		120	35	6

BITNER Cable Factory reserves the right to modify specifications without prior notification.

Power conductor cross section	Power conductor resistance	Current carrying capacity	Unit inductivity	Unit inductive reactance	Unit capacitance to earth	Unit short-circuit to earth current
[mm²]	[Ω/km]	[A]	[mH/km]	[Ω/km]	[µF/km]	[A/km]
25	0,795	146	0,366	0,115	0,30	0,99
35	0,565	180	0,343	0,108	0,35	1,15
50	0,393	222	0,327	0,103	0,40	1,29
70	0,277	275	0,310	0,097	0,46	1,49
95	0,210	328	0,294	0,092	0,53	1,73
120	0,164	379	0,286	0,090	0,57	1,87

CHAPTER V

MINING SIGNAL CABLES

YnKGSY

PVC insulated and sheathed mining signal cable
300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper, PVC insulated and sheathed conductors, with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 300/500V, 0,6/1 kV
Test voltage:
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Outer sheath: special, non-flammable PVC, preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey for 300/500 V yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control devices. The cable is suitable for:
- open-pit and strip mines, out of the areas with risk of explosion and in underground mines without methane
- intrinsically safe circuits
open-pit and strip mines, in areas with risk of explosion
- intrinsically safe circuits
in underground mines categorised as class “A” coal dust explosion hazard.

Sample cable marking: YnKGSY 4x1+1mm^2 300/500V - 5-conductor cable, nominal conductor cross section: 1 mm^2, voltage rating: 300/500V


mining applications


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Conductors/ cross section	YnKGSY 300/500V			YnKGSY 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x0,75+0,75	G30061	7,3	73	G62260	8,5	93
2x0,75+0,75	G30062	7,6	83	G62261	8,8	107
3x0,75+0,75	G30063	8,2	98	G62262	9,6	126
4x0,75+0,75	G30064	8,7	113	G62263	10,2	146
6x0,75+0,75	G30065	9,2	135	G62264	11,0	174
9x0,75+0,75	G30066	11,2	182	G62265	13,4	238
11x0,75+0,75	G30067	11,4	202	G62266	13,8	264
13x0,75+0,75	G30068	11,9	225	G62267	14,4	294
18x0,75+0,75	G30069	13,4	283	G62268	16,3	370
20x0,75+0,75	G30070	14,4	341	G62269	17,5	445
23x0,75+0,75	G30071	15,8	389	G62270	19,4	510
26x0,75+0,75	G30072	16,1	422	G62271	19,8	554
29x0,75+0,75	G30073	16,6	457	G62272	20,4	599
32x0,75+0,75	G30074	17,2	496	G62273	21,2	653
36x0,75+0,75	G30075	17,8	542	G62274	22,0	711

BITNER CABLE FACTORY

YnKGSY PVC insulated and sheathed mining signal cable 300/500V; 0,6/1kV

Conductors/ cross section	YnKGSY 300/500V			YnKGSY 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1+1	G30001	7,6	81	G62200	8,7	103
2x1+1	G30002	7,9	94	G62201	9,1	118
3x1+1	G30003	8,5	111	G62202	9,9	103
4x1+1	G30004	9,0	129	G62203	10,6	163
6x1+1	G30005	9,6	155	G62204	11,4	197
9x1+1	G30006	11,7	211	G62205	14,0	269
11x1+1	G30007	12,0	235	G62206	14,4	300
13x1+1	G30008	12,5	263	G62207	15,0	335
18x1+1	G30009	14,2	368	G62208	17,1	469
20x1+1	G30010	15,1	399	G62209	18,3	509
23x1+1	G30011	16,6	456	G62210	20,2	583
26x1+1	G30012	16,9	496	G62211	20,6	634
29x1+1	G30013	17,5	540	G62212	21,3	689
32x1+1	G30014	18,1	587	G62213	22,1	749
36x1+1	G30015	18,8	642	G62214	23,0	820
1x1,5+1,5	G30016	8,4	101	G62215	9,1	116
2x1,5+1,5	G30017	8,8	119	G62216	9,5	137
3x1,5+1,5	G30018	9,5	142	G62217	10,4	163
4x1,5+1,5	G30019	10,1	167	G62218	11,1	191
6x1,5+1,5	G30020	10,8	203	G62219	11,9	232
9x1,5+1,5	G30021	13,3	279	G62220	14,7	321
11x1,5+1,5	G30022	13,6	314	G62221	15,1	359
13x1,5+1,5	G30023	14,3	351	G62222	15,8	404
18x1,5+1,5	G30024	16,2	488	G62223	18,1	566
20x1,5+1,5	G30025	17,3	540	G62224	19,3	618
23x1,5+1,5	G30026	19,1	617	G62225	21,4	708
26x1,5+1,5	G30027	19,5	674	G62226	21,8	774
29x1,5+1,5	G30028	20,1	734	G62227	22,6	842
32x1,5+1,5	G30029	20,9	801	G62228	23,5	919
36x1,5+1,5	G30030	21,7	879	G62229	24,4	1006
1x2,5+2,5	G30031	9,1	128	G62230	9,9	145
2x2,5+2,5	G30032	9,5	154	G62231	10,4	174
3x2,5+2,5	G30033	10,4	186	G62232	11,3	210
4x2,5+2,5	G30034	11,1	222	G62233	12,1	249
6x2,5+2,5	G30035	11,9	275	G62234	13,1	308
9x2,5+2,5	G30036	14,7	380	G62235	16,2	427
11x2,5+2,5	G30037	15,1	478	G62236	16,7	537
13x2,5+2,5	G30038	15,8	540	G62237	18,2	605
18x2,5+2,5	G30039	18,2	696	G62238	20,5	780
20x2,5+2,5	G30040	19,3	759	G62239	21,5	851
23x2,5+2,5	G30041	21,4	869	G62240	23,8	974
26x2,5+2,5	G30042	21,8	953	G62241	24,3	1068
29x2,5+2,5	G30043	22,6	1043	G62242	25,1	1167
32x2,5+2,5	G30044	23,5	1140	G62243	26,1	1276
36x2,5+2,5	G30045	24,4	1255	G62244	27,2	1404
1x4+4	G30046	10,5	142	G62245	11,3	205
2x4+4	G30047	11,0	228	G62246	11,9	252
3x4+4	G30048	12,1	280	G62247	13,0	308
4x4+4	G30049	12,9	335	G62248	14,0	370
6x4+4	G30050	13,9	421	G62249	15,1	463
9x4+4	G30051	17,3	589	G62250	18,9	648
11x4+4	G30052	17,9	676	G62251	19,5	740
13x4+4	G30053	18,7	766	G62252	20,5	840
18x4+4	G30054	20,8	996	G62253	22,8	1090
20x4+4	G30055	21,8	1089	G62254	23,9	1191
23x4+4	G30056	24,2	1248	G62255	26,6	1367
26x4+4	G30057	24,7	1375	G62256	27,1	1504
29x4+4	G30058	25,5	1508	G62257	28,2	1656
32x4+4	G30059	26,5	1650	G62258	29,4	1819
36x4+4	G30060	27,9	1829	G62259	30,7	2013

YnKGSLY

PVC insulated and sheathed mining signal cable
150/250V; 300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with PVC insulated multi-stranded conductors, PVC sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage U_o/U:
150/250V, 300/500V, 0,6/1 kV
Test voltage:
1,5 kV for 150/250 V
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 150/250 V, 300/500 V yellow for 0,6/1 kV

Application:

Cables intended for measurement control circuits local control, signal and communication systems in:
- strip and open-pit mines, in areas where no explosion hazard exists
- underground mines, in non-methane areas
- underground mines categorised as class “A” coal dust explosion hazard.

Sample cable marking:
YnKGSLY 9x1,5+1,5mm^2 0,6/1 kV - 10-conductor cable, nominal power and control conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


high flexibility


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Conductors/ cross section	YnKGSLY 150/250V			YnKGSLY 300/500V			YnKGSLY 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x0,75+0,75	G10061	7,3	69	G30360	7,6	75	G60061	8,8	97
2x0,75+0,75	G10062	7,5	78	G30361	7,9	86	G60062	9,2	111
3x0,75+0,75	G10063	8,1	91	G30362	8,6	100	G60063	10,0	130
4x0,75+0,75	G10064	8,6	105	G30363	9,1	117	G60064	10,6	151
6x0,75+0,75	G10065	9,6	139	G30364	10,2	153	G60065	12,0	198
9x0,75+0,75	G10066	11,6	188	G30365	12,4	207	G60066	14,8	272
11x0,75+0,75	G10067	11,9	208	G30366	12,7	229	G60067	15,2	300
13x0,75+0,75	G10068	12,4	231	G30367	13,2	253	G60068	15,9	333
18x0,75+0,75	G10069	13,6	288	G30368	14,6	317	G60069	17,6	417
20x0,75+0,75	G10070	14,1	310	G30369	15,2	343	G60070	18,4	452
23x0,75+0,75	G10071	15,5	354	G30370	16,7	391	G60071	20,3	517
26x0,75+0,75	G10072	15,8	383	G30371	17,0	422	G60072	20,7	559
29x0,75+0,75	G10073	16,3	415	G30372	17,6	458	G60073	21,4	606
32x0,75+0,75	G10074	16,9	450	G30373	18,2	497	G60074	22,3	660
36x0,75+0,75	G10075	17,5	490	G30374	18,9	541	G60075	23,1	717

BITNER CABLE FACTORY

YnKGSLY

PVC insulated and sheathed mining signal cable
150/250V; 300/500V; 0,6/1kV

Conductors/ cross section	YnKGSLY 150/250V			YnKGSLY 300/500V			YnKGSLY 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1+1	G10001	7,5	77	G30300	7,9	83	G60001	9,1	105
2x1+1	G10002	7,8	90	G30301	8,2	96	G60002	9,5	122
3x1+1	G10003	8,4	105	G30302	8,9	114	G60003	10,3	144
4x1+1	G10004	9,0	120	G30303	9,4	128	G60004	11,0	168
6x1+1	G10005	9,6	145	G30304	10,6	175	G60005	11,9	199
9x1+1	G10006	11,6	196	G30305	12,9	237	G60006	14,6	274
11x1+1	G10007	11,9	218	G30306	13,2	262	G60007	15,0	304
13x1+1	G10008	12,4	240	G30307	13,8	292	G60008	16,5	376
18x1+1	G10009	14,3	338	G30308	15,2	367	G60009	18,3	474
20x1+1	G10010	14,9	366	G30309	15,9	398	G60010	19,2	515
23x1+1	G10011	16,4	415	G30310	17,5	454	G60011	21,2	587
26x1+1	G10012	16,7	454	G30311	17,8	494	G60012	21,7	640
29x1+1	G10013	17,3	494	G30312	18,4	535	G60013	22,4	694
32x1+1	G10014	17,9	536	G30313	19,1	581	G60014	23,3	756
36x1+1	G10015	18,5	584	G30314	19,8	634	G60015	24,1	823
1x1,5+1,5	G10016	8,1	93	G30315	8,9	107	G60016	9,6	123
2x1,5+1,5	G10017	8,5	109	G30316	9,3	126	G60017	10,1	144
3x1,5+1,5	G10018	9,1	129	G30317	10,1	149	G60018	11,0	171
4x1,5+1,5	G10019	9,7	150	G30318	10,7	175	G60019	11,8	202
6x1,5+1,5	G10020	10,4	184	G30319	11,6	212	G60020	12,7	250
9x1,5+1,5	G10021	13,4	280	G30320	15,0	325	G60021	16,6	374
11x1,5+1,5	G10022	13,7	313	G30321	15,4	363	G60022	17,1	419
13x1,5+1,5	G10023	14,3	350	G30322	16,1	406	G60023	17,9	468
18x1,5+1,5	G10024	15,8	445	G30323	17,8	515	G60024	19,8	593
20x1,5+1,5	G10025	16,5	484	G30324	18,6	559	G60025	20,8	645
23x1,5+1,5	G10026	18,2	553	G30325	20,6	641	G60026	23,0	739
26x1,5+1,5	G10027	18,6	604	G30326	21,0	698	G60027	23,5	805
29x1,5+1,5	G10028	19,2	657	G30327	21,7	760	G60028	24,3	876
32x1,5+1,5	G10029	19,9	715	G30328	22,6	829	G60029	25,3	957
36x1,5+1,5	G10030	20,6	784	G30329	23,4	907	G60030	26,2	1044
1x2,5+2,5	G10031	9,0	119	G30330	9,7	135	G60031	10,5	153
2x2,5+2,5	G10032	9,4	143	G30331	10,2	160	G60032	11,0	182
3x2,5+2,5	G10033	10,2	172	G30332	11,1	193	G60033	12,1	218
4x2,5+2,5	G10034	10,9	203	G30333	11,9	229	G60034	12,9	260
6x2,5+2,5	G10035	11,7	250	G30334	12,8	281	G60035	14,0	316
9x2,5+2,5	G10036	15,2	386	G30335	16,7	434	G60036	18,4	490
11x2,5+2,5	G10037	15,6	436	G30336	17,2	490	G60037	18,9	552
13x2,5+2,5	G10038	16,3	492	G30337	18,0	551	G60038	19,8	620
18x2,5+2,5	G10039	18,1	630	G30338	20,0	706	G60039	22,1	796
20x2,5+2,5	G10040	18,9	686	G30339	20,9	768	G60040	23,2	867
23x2,5+2,5	G10041	20,9	785	G30340	23,2	881	G60041	25,7	994
26x2,5+2,5	G10042	21,4	861	G30341	23,7	964	G60042	26,3	1088
29x2,5+2,5	G10043	22,1	940	G30342	24,5	1052	G60043	27,2	1187
32x2,5+2,5	G10044	22,9	1026	G30343	25,5	1150	G60044	28,4	1305
36x2,5+2,5	G10045	23,8	1128	G30344	26,5	1259	G60045	29,6	1437
1x4+4	G10046	10,9	189	G30345	11,3	199	G60046	12,1	221
2x4+4	G10047	11,5	231	G30346	11,9	242	G60047	12,8	268
3x4+4	G10048	12,6	282	G30347	13,1	296	G60048	14,0	325
4x4+4	G10049	13,5	336	G30348	12,3	354	G60049	15,1	391
6x4+4	G10050	14,6	421	G30349	15,2	441	G60050	16,4	485
9x4+4	G10051	18,2	587	G30350	19,0	616	G60051	20,6	679
11x4+4	G10052	18,7	669	G30351	19,6	702	G60052	21,2	772
13x4+4	G10053	19,6	757	G30352	20,5	793	G60053	22,3	873
18x4+4	G10054	21,8	981	G30353	22,8	1027	G60054	24,8	1129
20x4+4	G10055	22,9	1073	G30354	23,9	1122	G60055	26,1	1234
23x4+4	G10056	25,4	1230	G30355	26,6	1288	G60056	29,2	1429
26x4+4	G10057	26,0	1353	G30356	27,2	1416	G60057	29,9	1570
29x4+4	G10058	26,9	1482	G30357	28,2	1556	G60058	31,0	1725
32x4+4	G10059	28,1	1628	G30358	29,5	1712	G60059	32,4	1896
36x4+4	G10060	29,2	1800	G30359	30,7	1890	G60060	33,7	2091

YKGSYkonyn

Screened PVC insulated and sheathed mining signal cable
300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper, PVC insulated conductors, PVC inner sheath, common screen of tin-plated cooper wires, PVC outer sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 300/500V, 0,6/1 kV
Test voltage:
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Inner sheath: PVC
Screen: tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 300/500 V yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control devices. The cable is suitable for:
-strip and open-pit mines, in areas where no explosion hazard exists, and underground mines without methane presence
- intrinsically safe circuits
open-pit and strip mines, in areas with risk of explosion
- intrinsically safe circuits
underground mines, in areas categorised as class “A” coal dust explosion hazard.

Sample cable marking:
YKGSYkonyn 11 x 1,5 + 1,5 mm^2 0,6/1 kV
-12-conductor cable, nominal power and protective conductor cross section:1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Conductors/ cross section	YKGSYkonyn 300/500V			YKGSYkonyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1+1	G30501	11,9	199	G62401	13,2	245
3x1+1	G30502	12,5	224	G62402	13,9	275
4x1+1	G30503	13,1	257	G62403	14,8	316
6x1+1	G30504	13,7	284	G62404	15,6	361
9x1+1	G30505	16,0	372	G62405	18,6	482
11x1+1	G30506	16,3	402	G62406	19,0	522
13x1+1	G30507	17,0	442	G62407	19,8	575
18x1+1	G30508	18,3	534	G62408	21,5	694
20x1+1	G30509	19,0	577	G62409	22,4	750
23x1+1	G30510	20,5	650	G62410	24,5	855
26x1+1	G30511	21,0	698	G62411	24,9	912
29x1+1	G30512	21,5	749	G62412	25,6	979
32x1+1	G30513	22,2	811	G62413	26,5	1056
36x1+1	G30514	23,6	886	G62414	28,2	1166

BITNER CABLE FACTORY

YKGSYkonyn

Screened PVC insulated and sheathed mining signal cable
300/500V; 0,6/1kV

Conductors/ cross section	YKGSYkonyn 300/500V			YKGSYkonyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1,5+1,5	G30516	12,8	236	G62416	13,6	271
3x1,5+1,5	G30517	13,6	269	G62417	14,4	307
4x1,5+1,5	G30518	14,2	314	G62418	15,4	354
6x1,5+1,5	G30519	15,1	354	G62419	16,4	414
9x1,5+1,5	G30520	17,8	468	G62420	19,5	551
11x1,5+1,5	G30521	18,2	511	G62421	19,9	602
13x1,5+1,5	G30522	18,9	560	G62422	20,8	666
18x1,5+1,5	G30523	20,5	689	G62423	22,7	818
20x1,5+1,5	G30524	21,4	747	G62424	23,6	880
23x1,5+1,5	G30525	23,3	849	G62425	25,8	1004
26x1,5+1,5	G30526	23,6	911	G62426	26,3	1082
29x1,5+1,5	G30527	24,4	985	G62427	27,1	1162
32x1,5+1,5	G30528	25,2	1071	G62428	28,0	1259
36x1,5+1,5	G30529	26,8	1173	G62429	29,9	1392
2x2,5+2,5	G30531	13,7	285	G62431	14,5	323
3x2,5+2,5	G30532	14,6	330	G62432	15,4	375
4x2,5+2,5	G30533	15,4	396	G62433	16,4	435
6x2,5+2,5	G30534	16,3	449	G62434	17,5	513
9x2,5+2,5	G30535	19,5	608	G62435	21,1	696
11x2,5+2,5	G30536	19,9	671	G62436	21,6	768
13x2,5+2,5	G30537	20,8	747	G62437	22,5	853
18x2,5+2,5	G30538	22,7	931	G62438	24,0	1064
20x2,5+2,5	G30539	23,6	1007	G62239	25,7	1154
23x2,5+2,5	G30540	25,8	1148	G62440	28,2	1319
26x2,5+2,5	G30541	26,2	1240	G62441	28,8	1425
29x2,5+2,5	G30542	27,1	1346	G62442	29,7	1545
32x2,5+2,5	G30543	28,0	1449	G62443	30,7	1673
36x2,5+2,5	G30544	29,8	1613	G62444	33,1	1882
2x4+4	G30546	14,6	350	G62446	15,5	395
3x4+4	G30547	15,7	415	G62447	16,5	463
4x4+4	G30548	16,6	500	G62448	17,7	544
6x4+4	G30549	17,7	581	G62449	18,9	623
9x4+4	G30550	21,4	794	G62450	23,0	894
11x4+4	G30551	21,9	885	G62451	23,6	996
13x4+4	G30552	22,9	991	G62452	24,6	1113
18x4+4	G30553	25,0	1252	G62453	27,0	1406
20x4+4	G30554	26,0	1358	G62454	28,2	1528
23x4+4	G30555	28,7	1558	G62455	31,1	1753
26x4+4	G30556	29,2	1691	G62456	31,8	1912
29x4+4	G30557	30,2	1842	G62457	33,0	2086
32x4+4	G30558	31,2	2017	G62458	34,1	2266
36x4+4	G30559	33,5	2234	G62459	36,7	2537

YnKGSYkon

Screened PVC insulated and sheathed mining signal cable 300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper conductors, PVC insulation, common screen of tin-plated cooper wires, PVC sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 300/500V
Test voltage: 2,0 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Screen: tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables intended for supplying and controlling power control, safety and control devices. The cable is suitable for:
-strip and open-pit mines, in areas where no explosion hazard exists, and underground mines without methane presence
- intrinsically safe circuits
open-pit and strip mines, in areas with risk of explosion
- intrinsically safe circuits
underground mines, in areas categorised as class “A” coal dust explosion hazard.

Sample cable marking:
YnKGSYkon 13 x 1,5 + 1,5 mm^2 300/500V
- 14-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 300/500V


mining applications


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Cat. no.	Conductors/ cross section [nxmm^2]	Calculated OD [mm]	Calculated cable weight [kg/km]
G30701	2x1+1	8,9	118
G30702	3x1+1	9,6	137
G30703	4x1+1	10,1	159
G30704	6x1+1	10,8	190
G30705	9x1+1	12,9	256
G30706	11x1+1	13,2	285
G30707	13x1+1	13,8	318
G30708	18x1+1	15,1	399
G30709	20x1+1	15,7	436
G30710	23x1+1	17,2	490
G30711	26x1+1	17,5	533
G30712	29x1+1	18,1	579
G30713	32x1+1	18,7	629
G30714	36x1+1	19,4	686

BITNER CABLE FACTORY

YnKGSYkon

Screened PVC insulated and sheathed mining signal cable 300/500V; 0,6/1kV

Cat. no.	Conductors/ cross section [nxmm^2]	Calculated OD [mm]	Calculated cable weight [kg/km]
G30716	2x1,5+1,5	9,8	143
G30717	3x1,5+1,5	10,6	172
G30718	4x1,5+1,5	11,2	202
G30719	6x1,5+1,5	12,0	244
G30720	9x1,5+1,5	14,6	332
G30721	11x1,5+1,5	15,0	374
G30722	13x1,5+1,5	15,6	419
G30723	18x1,5+1,5	17,2	531
G30724	20x1,5+1,5	17,9	582
G30725	23x1,5+1,5	19,7	655
G30726	26x1,5+1,5	20,1	715
G30727	29x1,5+1,5	20,7	779
G30728	32x1,5+1,5	21,5	849
G30729	36x1,5+1,5	22,3	929
G30731	2x2,5+2,5	10,6	182
G30732	3x2,5+2,5	11,5	220
G30733	4x2,5+2,5	12,3	262
G30734	6x2,5+2,5	13,2	324
G30735	9x2,5+2,5	16,1	444
G30736	11x2,5+2,5	16,5	506
G30737	13x2,5+2,5	17,3	570
G30738	18x2,5+2,5	19,1	732
G30739	20x2,5+2,5	19,9	805
G30740	23x2,5+2,5	22,0	908
G30741	26x2,5+2,5	22,4	997
G30742	29x2,5+2,5	23,2	1091
G30743	32x2,5+2,5	24,1	1191
G30744	36x2,5+2,5	25,0	1309
G30746	2x4+4	11,6	236
G30747	3x4+4	12,7	293
G30748	4x4+4	13,5	353
G30749	6x4+4	14,5	442
G30750	9x4+4	17,9	610
G30751	11x4+4	18,5	701
G30752	13x4+4	19,3	797
G30753	18x4+4	21,4	1034
G30754	20x4+4	22,4	1139
G30755	23x4+4	24,8	1288
G30756	26x4+4	25,3	1421
G30757	29x4+4	26,1	1559
G30758	32x4+4	27,1	1708
G30759	36x4+4	28,4	1895

YKGSLYkonyn

Screened PVC insulated and sheathed mining signal cable
150/250V; 300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper, PVC insulated conductors, PVC inner sheath, common screen of tin-plated cooper wires, PVC outer sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 150/250V, 300/500V, 0,6/1 kV
Test voltage:
1,5 kV for 150/250 V
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Inner sheath: PVC
Screen: tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 150/250 V, 300/500 V
yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control devices. The cable is suitable for:
-strip and open-pit mines, in areas where no explosion hazard exists, and underground mines without methane presence
- intrinsically safe circuits
open-pit and strip mines, in areas with risk of explosion
- intrinsically safe circuits
underground mines
in areas categorised as class “A” coal dust explosion hazard.

Sample cable marking: YKGSLYkonyn 4x1,5+1.5mm^2 0,6/1 kV - 5-conductor cable, nominal conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


high flexibility


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Conductors/ cross section	YKGSLYkonyn 150/250V			YKGSLYkonyn 300/500V			YKGSLYkonyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1+1	G10201	10,2	170	G30901	12,4	211	G60301	13,7	260
3x1+1	G10202	10,8	196	G30902	13,0	237	G60302	14,5	292
4x1+1	G10203	11,4	223	G30903	13,6	273	G60303	15,4	335
6x1+1	G10204	12,4	251	G30904	14,2	301	G60304	16,2	383
9x1+1	G10205	14,9	338	G30905	16,6	394	G60305	19,3	511
11x1+1	G10206	15,2	372	G30906	17,0	426	G60306	19,8	553
13x1+1	G10207	15,9	392	G30907	17,7	469	G60307	20,6	609
18x1+1	G10208	17,6	498	G30908	19,0	566	G60308	22,4	736
20x1+1	G10209	18,4	537	G30909	19,8	612	G60309	23,3	795
23x1+1	G10210	20,0	593	G30910	21,3	688	G60310	25,5	906
26x1+1	G10211	20,3	640	G30911	21,8	740	G60311	25,9	966
29x1+1	G10212	21,1	694	G30912	22,4	794	G60312	26,6	1038
32x1+1	G10213	21,9	754	G30913	23,1	859	G60313	27,6	1119
36x1+1	G10214	22,7	819	G30914	24,5	939	G60314	29,3	1236

BITNER CABLE FACTORY

YKGSLYkonyn

Screened PVC insulated and sheathed mining signal cable
150/250V; 300/500V; 0,6/1kV

Conductors/ cross section	YKGSLYkonyn 150/250V			YKGSLYkonyn 300/500V			YKGSLYkonyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1,5+1,5	G10216	111,3	208	G30916	13,3	250	G60316	14,1	287
3x1,5+1,5	G10217	12,0	248	G30917	14,1	285	G60317	15,0	325
4x1,5+1,5	G10218	13,0	292	G30918	14,8	333	G60318	16,0	376
6x1,5+1,5	G10219	13,9	322	G30919	15,7	375	G60319	17,1	439
9x1,5+1,5	G10220	16,8	440	G30920	18,5	496	G60320	20,3	584
11x1,5+1,5	G10221	17,2	488	G30921	18,9	542	G60321	20,7	638
13x1,5+1,5	G10222	18,1	525	G30922	19,7	593	G60322	21,6	705
18x1,5+1,5	G10223	19,7	652	G30923	21,3	730	G60323	23,6	867
20x1,5+1,5	G10224	20,6	706	G30924	22,3	792	G60324	24,5	933
23x1,5+1,5	G10225	22,9	803	G30925	24,2	900	G60325	26,8	1064
26x1,5+1,5	G10226	23,3	868	G30926	24,5	965	G60326	27,4	1146
29x1,5+1,5	G10227	23,9	930	G30927	25,4	1045	G60327	28,2	1232
32x1,5+1,5	G10228	24,8	1002	G30928	26,2	1136	G60328	29,1	1334
36x1,5+1,5	G10229	25,8	1107	G30929	27,9	1243	G60329	31,1	1475
2x2,5+2,5	G10231	12,3	266	G30931	14,2	302	G60331	15,1	343
3x2,5+2,5	G10232	13,2	322	G30932	15,2	350	G60332	16,0	397
4x2,5+2,5	G10233	14,2	373	G30933	16,0	420	G60333	17,1	461
6x2,5+2,5	G10234	15,1	421	G30934	17,0	476	G60334	18,2	544
9x2,5+2,5	G10235	18,7	589	G30935	20,3	645	G60335	21,9	738
11x2,5+2,5	G10236	19,2	660	G30936	20,7	712	G60336	22,5	814
13x2,5+2,5	G10237	20,0	705	G30937	21,6	792	G60337	23,4	904
18x2,5+2,5	G10238	22,3	910	G30938	23,6	987	G60338	25,0	1128
20x2,5+2,5	G10239	23,2	988	G30939	24,5	1067	G60339	26,7	1224
23x2,5+2,5	G10240	25,4	1098	G30940	26,8	1216	G60340	29,3	1398
26x2,5+2,5	G10241?	26,4	1221	G30941	27,2	1315	G60341	30,0	1511
29x2,5+2,5	G10242	27,1	1312	G30942	28,2	1427	G60342	30,9	1637
32x2,5+2,5	G10243	28,0	1418	G30943	29,1	1536	G60343	31,9	1773
36x2,5+2,5	G10244	29,0	1553	G30944	31,0	1710	G60344	34,4	1995
2x4+4	-	-	-	G30946	15,2	371	G60346	16,1	418
3x4+4	-	-	-	G30947	16,3	440	G60347	17,2	490
4x4+4	-	-	-	G30948	17,3	529	G60348	18,4	577
6x4+4	-	-	-	G30949	18,4	615	G60349	19,7	660
9x4+4	-	-	-	G30950	22,3	842	G60350	23,9	947
11x4+4	-	-	-	G30951	22,8	938	G60351	24,5	1056
13x4+4	-	-	-	G30952	23,8	1050	G60352	25,6	1180
18x4+4	-	-	-	G30953	26,0	1327	G60353	28,1	1490
20x4+4	-	-	-	G30954	27,0	1439	G60354	29,3	1620
23x4+4				G30955	29,8	1651	G60355	32,3	1858
26x4+4	-	-	-	G30956	30,4	1793	G60356	33,1	2027
29x4+4				G30957	31,4	1953	G60357	34,3	2211
32x4+4	-	-	-	G30958	32,4	2138	G60358	35,5	2402
36x4+4				G30959	34,8	2368	G60359	38,2	2689

YnKGSLYkon

Screened PVC insulated and sheathed mining signal cable
150/250V; 300/500V

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with PVC insulated multi-stranded conductors, common screen of tin-plated cooper wires, PVC outer sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 150/250V, 300/500V
Test voltage:
1,5 kV for 150/250 V
2,0 kV for 300/500 V
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Screen: tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables intended for supplying and controlling power control, safety and control devices. The cable is suitable for:
-strip and open-pit mines, in areas where no explosion hazard exists, and underground mines without methane presence
- intrinsically safe circuits
open-pit and strip mines, in areas with risk of explosion,
- intrinsically safe circuits
underground mines, in areas categorised as class “A” coal dust explosion hazard.

Sample cable marking: YnKGSLYkon 6x1,5+1,5mm^2 300/500V - 7-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 300/500V


mining applications


high flexibility


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Conductors/ cross section	YnKGSLYkon 150/250V			YnKGSLYkon 300/500V		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1+1	G10401	8,3	99	G31101	9,3	121
3x1+1	G10402	9,1	123	G31102	10,0	140
4x1+1	G10403	9,8	144	G31103	10,6	164
6x1+1	G10404	10,6	179	G31104	11,3	194
9x1+1	G10405	12,7	241	G31105	13,6	260
11x1+1	G10406	13,1	273	G31106	13,9	290
13x1+1	G10407	13,9	312	G31107	14,5	322
18x1+1	G10408	15,3	397	G31108	15,9	403
20x1+1	G10409	15,5	416	G31109	16,6	441
23x1+1	G10410	17,1	473	G31110	18,2	494
26x1+1	G10411	16,9	504	G31111	18,6	537
29x1+1	G10412	17,2	538	G31112	19,1	582
32x1+1	G10413	17,6	577	G31113	19,8	632
36x1+1	G10414	18,0	628	G31114	20,5	688

BITNER CABLE FACTORY

YnKGSLYkon

Screened PVC insulated and sheathed mining signal cable
150/250V; 300/500V

Conductors/ cross section	YnKGSLYkon 150/250V			YnKGSLYkon 300/500V		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1,5+1,5	G10416	9,5	131	G31116	10,1	146
3x1,5+1,5	G10417	10,1	158	G31117	11,0	174
4x1,5+1,5	G10418	11,0	188	G31118	11,6	205
6x1,5+1,5	G10419	11,9	238	G31119	12,5	248
9x1,5+1,5	G10420	14,7	328	G31120	15,2	334
11x1,5+1,5	G10421	15,1	374	G31121	15,6	375
13x1,5+1,5	G10422	15,8	421	G31122	16,3	420
18x1,5+1,5	G10423	17,5	541	G31123	17,9	530
20x1,5+1,5	G10424	17,9	576	G31124	18,7	581
23x1,5+1,5	G10425	19,8	655	G31125	20,6	653
26x1,5+1,5	G10426	19,4	691	G31126	21,0	713
29x1,5+1,5	G10427	19,6	739	G31127	21,7	776
32x1,5+1,5	G10428	20,4	803	G31128	22,5	845
36x1,5+1,5	G10429	20,9	876	G31129	23,3	923
2x2,5+2,5	G10431	10,5	174	G31131	11,3	188
3x2,5+2,5	G10432	11,2	213	G31132	12,3	227
4x2,5+2,5	G10433	12,2	255	G31133	13,1	270
6x2,5+2,5	G10434	13,2	328	G31134	14,1	333
9x2,5+2,5	G10435	16,4	455	G31135	17,4	455
11x2,5+2,5	G10436	17,0	523	G31136	17,9	516
13x2,5+2,5	G10437	17,7	594	G31137	18,7	581
18x2,5+2,5	G10438	19,9	779	G31138	20,7	744
20x2,5+2,5	G10439	20,1	821	G31139	21,6	818
23x2,5+2,5	G10440	22,5	944	G31140	23,9	922
26x2,5+2,5	G10441	22,1	1000	G31141	24,4	1011
29x2,5+2,5	G10442	22,3	1074	G31142	25,2	1104
32x2,5+2,5	G10443	23,0	1157	G31143	26,2	1205
36x2,5+2,5	G10444	23,6	1266	G31144	27,2	1322
2x4+4	-	-	-	G31146	12,3	245
3x4+4	-	-	-	G31147	13,4	302
4x4+4	-	-	-	G31148	14,3	365
6x4+4	-	-	-	G31149	15,5	456
9x4+4	-	-	-	G31150	19,2	629
11x4+4	-	-	-	G31151	19,7	722
13x4+4	-	-	-	G31152	20,7	819
18x4+4	-	-	-	G31153	22,9	1061
20x4+4	-	-	-	G31154	24,0	1168
23x4+4	-	-	-	G31155	26,6	1320
26x4+4	-	-	-	G31156	27,2	1456
29x4+4	-	-	-	G31157	28,3	1609
32x4+4	-	-	-	G31158	29,4	1761
36x4+4	-	-	-	G31159	30,5	1938

YKGSYFtZnyn

Armoured PVC insulated and sheathed mining signal cable
300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper conductors, PVC insulation and sheath, with galvanised steel tape armouring, PVC outer sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 300/500V, 0,6/1 kV
Test voltage:
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Inner sheath: PVC
Armour: galvanised steel tape
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 300/500 V
yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control devices. The cable is suitable for:
-strip and open-pit mines, in areas where no explosion hazard exists, and underground mines without methane presence
- intrinsically safe circuits
open-pit and strip mines, in areas with risk of explosion
- intrinsically safe circuits
underground mines, in areas categorised as class “A” coal dust explosion hazard.
The cable is suitable for use in excavation sites with an inclination angle up to 45.

Sample cable marking: YKGSYFtZnyn 11 x 1,5 + 1,5 mm^2 0,6/1 kV - 12-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

excavation sites with an inclination angle ≤ 45°

Conductors/ cross section	YKGSYFtZnyn 300/500V			YKGSYFtZnyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1+1	G31301	11,0	204	G60501	12,1	235
3x1+1	G31302	11,6	230	G60502	13,0	271
4x1+1	G31303	12,6	266	G60503	13,9	306
6x1+1	G31304	13,5	314	G60504	14,8	356
9x1+1	G31305	16,0	407	G60505	18,1	481
11x1+1	G31306	16,4	443	G60506	18,5	522
13x1+1	G31307	17,4	499	G60507	19,3	570
18x1+1	G31308	18,9	600	G60508	21,0	688
20x1+1	G31309	19,7	644	G60509	22,3	759
23x1+1	G31310	21,8	743	G60510	24,3	852
26x1+1	G31311	22,2	793	G60511	24,8	910
29x1+1	G31312	22,8	848	G60512	25,5	974
32x1+1	G31313	23,6	906	G60513	27,6	1253
36x1+1	G31314	24,3	978	G60514	28,5	1344

BITNER CABLE FACTORY

YKGSYFtZnyn

Armoured PVC insulated and sheathed mining signal cable
300/500V; 0,6/1kV

Conductors/ cross section	YKGSYFtZnyn 300/500V			YKGSYFtZnyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1,5+1,5	G31316	11,7	234	G60516	12,5	259
3x1,5+1,5	G31317	12,6	274	G60517	13,5	302
4x1,5+1,5	G31318	13,6	316	G60518	14,5	342
6x1,5+1,5	G31319	14,5	372	G60519	15,4	404
9x1,5+1,5	G31320	17,7	504	G60520	18,9	549
11x1,5+1,5	G31321	18,1	551	G60521	19,4	601
13x1,5+1,5	G31322	18,8	605	G60522	20,2	660
18x1,5+1,5	G31323	20,5	737	G60523	22,5	826
20x1,5+1,5	G31324	21,7	814	G60524	23,4	889
23x1,5+1,5	G31325	23,7	915	G60525	25,6	1001
26x1,5+1,5	G31326	24,1	982	G60526	27,3	1284
29x1,5+1,5	G31327	24,8	1056	G60527	28,1	1371
32x1,5+1,5	G31328	26,1	1155	G60528	29,0	1463
36x1,5+1,5	G31329	27,8	1441	G60529	30,0	1576
2x2,5+2,5	G31331	12,5	282	G60531	13,6	314
3x2,5+2,5	G31332	13,5	332	G60532	14,5	364
4x2,5+2,5	G31333	14,5	380	G60533	15,6	418
6x2,5+2,5	G31334	15,4	457	G60534	16,8	511
9x2,5+2,5	G31335	18,9	625	G60535	20,6	689
11x2,5+2,5	G31336	19,4	693	G60536	21,3	773
13x2,5+2,5	G31337	20,2	767	G60537	22,4	865
18x2,5+2,5	G31338	22,5	970	G60538	24,5	1069
20x2,5+2,5	G31339	23,4	1049	G60539	26,0	1179
23x2,5+2,5	G31340	25,6	1184	G60540	29,3	1531
26x2,5+2,5	G31341	27,3	1489	G60541	29,9	1642
29x2,5+2,5	G31342	28,1	1599	G60542	31,0	1776
32x2,5+2,5	G31343	29,0	1714	G60543	32,2	1919
36x2,5+2,5	G31344	30,0	1857	G60544	33,3	2078
2x4+4	G31346	14,3	369	G60546	15,6	413
3x4+4	G31347	15,3	434	G60547	17,0	495
4x4+4	G31348	16,4	503	G60548	18,5	581
6x4+4	G31348	18,0	634	G60549	19,9	710
9x4+4	G31350	22,3	872	G60550	24,8	980
11x4+4	G31351	22,8	975	G60551	25,4	1095
13x4+4	G31352	23,8	1087	G60552	27,8	1434
18x4+4	G31353	27,8	1573	G60553	30,7	1780
20x4+4	G31354	28,5	1699	G60554	32,2	1938
23x4+4	G31355	31,6	1946	G60555	35,6	2203
26x4+4	G31356	32,2	2100	G60556	36,4	2393
29x4+4	G31357	33,2	2265	G60557	37,6	2579
32x4+4	G31358	34,3	2437	G60558	39,1	2789
36x4+4	G31359	35,7	2668	G60559	40,7	3054

YKGSYFoyn

Armoured PVC insulated and sheathed mining signal cable
300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper, PVC insulated conductors, PVC inner sheath, round steel wire armouring, PVC outer sheath with increased flame propagation resistance
Operating temperature: 40°C to 70°C
Minimum installation temperature: - 5°C
Operating voltage: 300/500V, 0,6/1 kV
Test voltage:
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Inner sheath: PVC
Armour: round galvanised steel wires
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 300/500 V
yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control devices. The cable is suitable for:
-strip and open-pit mines, in areas where no explosion hazard exists, and underground mines without methane presence
- intrinsically safe circuits
open-pit and strip mines, in areas with risk of explosion
- intrinsically safe circuits underground mines, in areas categorised as class “A” coal dust explosion hazard.
The cable is suitable for use in shafts and excavation sites with an inclination angle up to 90.

Sample cable marking: YKGSYFoyn
9 x 1,5 + 1,5 mm^2 0,6/1 kV - 10-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

shaft cable

Conductors/ cross section	YKGSYFoyn 300/500V			YKGSYFoyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1+1	G31701	12,1	245	G60901	13,3	282
3x1+1	G31702	12,8	276	G60902	14,3	325
4x1+1	G31703	13,9	319	G60903	15,3	367
6x1+1	G31704	14,9	377	G60904	16,3	427
9x1+1	G31705	17,6	488	G60905	19,9	577
11x1+1	G31706	18,0	576	G60906	20,4	679
13x1+1	G31707	19,1	649	G60907	21,2	741
18x1+1	G31708	20,8	780	G60908	23,1	894
20x1+1	G31709	21,3	837	G60909	24,1	987
23x1+1	G31710	23,5	966	G60910	26,2	1108
26x1+1	G31711	24,0	1031	G60911	26,8	1183
29x1+1	G31712	23,9	1102	G60912	26,8	1266
32x1+1	G31713	24,8	1178	G60940	29,0	1629
36x1+1	G31714	25,5	1271	G60941	29,9	1747

BITNER CABLE FACTORY

YKGSYFoyn

Armoured PVC insulated and sheathed mining signal cable
300/500V; 0,6/1kV

Conductors/ cross section	YKGSYFoyn 300/500V			YKGSYFoyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1,5+1,5	G31716	12,9	281	G60914	13,8	311
3x1,5+1,5	G31717	13,9	329	G60915	14,9	362
4x1,5+1,5	G31718	15,0	379	G60916	16,0	410
6x1,5+1,5	G31719	16,0	446	G60917	16,9	485
9x1,5+1,5	G31720	19,5	605	G60918	20,8	659
11x1,5+1,5	G31721	19,9	716	G60919	21,3	781
13x1,5+1,5	G31722	20,7	787	G60920	22,2	858
18x1,5+1,5	G31723	22,6	958	G60921	24,8	1074
20x1,5+1,5	G31724	23,4	1058	G60942	25,3	1156
23x1,5+1,5	G31725	25,6	1190	G60943	27,6	1301
26x1,5+1,5	G31726	26,0	1277	G60944	29,5	1669
29x1,5+1,5	G31727	26,0	1373	G60945	29,5	1782
32x1,5+1,5	G31728	27,4	1502	G60946	30,5	1902
36x1,5+1,5	G31729	29,2	1873	G60947	31,5	2049
2x2,5+2,5	G31731	13,8	338	G60923	15,0	377
3x2,5+2,5	G31732	14,9	398	G60924	16,0	437
4x2,5+2,5	G31733	16,0	456	G60925	17,2	502
6x2,5+2,5	G31734	16,9	548	G60926	18,5	613
9x2,5+2,5	G31735	20,8	750	G60927	22,7	827
11x2,5+2,5	G31736	21,3	901	G60928	23,4	1005
13x2,5+2,5	G31737	22,2	997	G60929	24,6	1125
18x2,5+2,5	G31753	24,8	1261	G60930	27,0	1390
20x2,5+2,5	G31754	25,3	1364	G60948	28,1	1533
23x2,5+2,5	G31755	27,6	1539	G60949	31,6	1990
26x2,5+2,5	G31756	29,5	1936	G60950	32,3	2135
29x2,5+2,5	G31757	29,5	2079	G60951	32,6	2309
32x2,5+2,5	G31758	30,5	2228	G60952	33,8	2495
36x2,5+2,5	G31759	31,5	2414	G60953	35,0	2701
2x4+4	G31739	15,7	443	G60932	17,2	496
3x4+4	G31740	16,8	521	G60933	18,7	594
4x4+4	G31741	18,0	604	G60934	20,4	697
6x4+4	G31742	19,8	761	G60935	21,9	852
9x4+4	G31743	24,5	1046	G60936	27,3	1176
11x4+4	G31744	25,1	1268	G60954	27,9	1424
13x4+4	G31745	26,2	1413	G60955	30,6	1864
18x4+4	G31746	30,6	2045	G60956	33,8	2314
20x4+4	G31747	30,8	2209	G60957	34,8	2519
23x4+4	G31748	34,1	2530	G60958	38,4	2864
26x4+4	G31749	34,8	2730	G60959	39,3	3111
29x4+4	G31750	34,9	2945	G60960	39,5	3353
32x4+4	G31751	36,0	3168	G60961	41,1	3626
36x4+4	G31752	37,5	3468	G60962	42,7	3970

YnHKGSY

PVC insulated and sheathed mining signal cable
with individually screened conductors 300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper, PVC insulated conductors, individual conductor screening, PVC sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 300/500V**;** 0,6/1 kV
Test voltage:
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Conductor screen: tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 300/500 V
yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control systems in strip, open-pit and underground mines, out of areas with the risk of explosion, and in areas with methane explosion hazard class “a”, “b” or “c”, and in excavation sites categorised as class “A” or “B” coal dust explosion hazard.

Sample cable marking: YnHKGSY 9x1,5+1,5mm^2 0,6/1 kV - 10-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


high flexibility


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

for potentially explosive areas

Conductors/ cross section	YnHKGSY 300/500V			YnHKGSY 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1+1	GG33500	8,6	102	G62900	9,5	118
2x1+1	GG33501	9,5	135	G62901	10,0	146
3x1+1	GG33502	10,3	161	G62902	10,9	178
4x1+1	GG33503	11,0	190	G62903	12,0	202
6x1+1	GG33504	11,8	231	G62904	13,2	262
9x1+1	GG33505	14,6	320	G62905	16,8	366
11x1+1	GG33506	15,0	359	G62906	17,0	425
13x1+1	GG33507	15,6	411	G62907	18,0	487
18x1+1	GG33508	17,3	529	G62908	20,0	639
20x1+1	GG33509	18,1	587	G62909	21,2	711
23x1+1	GG33510	20,0	667	G62910	23,7	810
26x1+1	GG33511	20,4	729	G62911	24,2	897
29x1+1	GG33512	21,1	795	G62912	25,1	987
32x1+1	GG33513	21,9	867	G62913	26,3	1089
36x1+1	GG33514	22,7	950	G62914	27,3	1209

BITNER CABLE FACTORY

YnHKGSY

PVC insulated and sheathed mining signal cable
with individually screened conductors 150/250V; 300/500V; 0,6/1kV

Conductors/ cross section	YnHKGSY 300/500V			YnHKGSY 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1,5+1,5	GG33515	9,5	135	G62915	9,9	143
2x1,5+1,5	GG33516	10,4	168	G62916	10,8	180
3x1,5+1,5	GG33517	11,3	202	G62917	11,7	225
4x1,5+1,5	GG33518	12,1	239	G62918	12,6	264
6x1,5+1,5	GG33519	13,0	295	G62919	13,9	319
9x1,5+1,5	GG33520	16,1	411	G62920	17,9	441
11x1,5+1,5	GG33521	16,6	464	G62921	17,9	504
13x1,5+1,5	GG33522	17,4	539	G62922	18,8	578
18x1,5+1,5	GG33523	19,3	691	G62923	21,0	761
20x1,5+1,5	GG33524	20,2	760	G62924	22,3	846
23x1,5+1,5	GG33525	22,4	864	G62925	24,9	965
26x1,5+1,5	GG33526	22,8	948	G62926	25,6	1083
29x1,5+1,5	GG33527	23,6	1035	G62927	26,5	1191
32x1,5+1,5	GG33528	24,6	1130	G62928	27,6	1301
36x1,5+1,5	GG33529	25,5	1241	G62929	28,8	1446
1x2,5+2,5	GG33530	10,0	165	G62930	10,7	175
2x2,5+2,5	GG33531	11,2	211	G62931	11,3	225
3x2,5+2,5	GG33532	12,3	257	G62932	12,4	268
4x2,5+2,5	GG33533	13,2	307	G62933	13,9	329
6x2,5+2,5	GG33534	14,2	383	G62934	15,1	404
9x2,5+2,5	GG33535	17,7	537	G62935	19,5	579
11x2,5+2,5	GG33536	18,2	617	G62936	19,6	665
13x2,5+2,5	GG33537	19,1	712	G62937	20,6	764
18x2,5+2,5	GG33538	21,2	921	G62938	23,3	1023
20x2,5+2,5	GG33539	22,3	1014	G62939	24,5	1124
23x2,5+2,5	GG33540	24,8	1154	G62940	27,5	1295
26x2,5+2,5	GG33541	25,3	1270	G62941	28,2	1439
29x2,5+2,5	GG33542	26,2	1390	G62942	29,2	1587
32x2,5+2,5	GG33543	27,2	1520	G62943	30,6	1748
36x2,5+2,5	GG33544	28,5	1689	G62944	31,8	1945
1x4+4	GG33545	11,5	225	G62945	12,6	245
2x4+4	GG33546	12,2	271	G62946	13,5	295
3x4+4	GG33547	13,4	334	G62947	14,9	356
4x4+4	GG33548	14,4	401	G62948	16,4	435
6x4+4	GG33549	15,5	508	G62949	18,2	595
9x4+4	GG33550	19,5	715	G62950	23,5	850
11x4+4	GG33551	20,1	828	G62951	23,6	980
13x4+4	GG33552	21,1	959	G62952	24,9	1128
18x4+4	GG33553	23,5	1250	G62953	28,1	1511
20x4+4	GG33554	24,7	1380	G62954	29,6	1661
23x4+4	GG33555	27,4	1571	G62955	33,3	1911
26x4+4	GG33556	28,2	1747	G62956	34,2	2143
29x4+4	GG33557	29,2	1916	G62957	35,5	2364
32x4+4	GG33558	30,4	2098	G62958	36,9	2586
36x4+4	GG33559	31,8	2331	G62959	38,7	2897

YnHKGSLY

PVC insulated and sheathed mining signal cable
with individually screened conductors 150/250V; 300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper, multi-stranded, PVC insulated conductors, individual conductor screening, PVC sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage:
150/250V, 300/500V, 0,6/1 kV
Test voltage:
1,5 kV for 150/250 V
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Conductor screen: tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 150/250 V, 300/500 V
yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control systems in strip, open-pit and underground mines, out of areas with the risk of explosion, and in areas with methane explosion hazard class “a”, “b” or “c”, and in excavation sites categorised as class “A” or “B” coal dust explosion hazard.

Sample cable marking: YnHKGSLY 9x1,5+1,5mm^2 0,6/1 kV - 10-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


high flexibility


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

for potentially explosive areas

Conductors/ cross section	YnHKGSLY 150/250V			YnHKGSLY 300/500V			YnHKGSLY 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1+1	G10600	9,1	97	G31900	9,5	105	G61100	10,7	125
2x1+1	G10601	9,5	119	G31901	10,0	130	G61101	11,2	155
3x1+1	G10602	10,2	143	G31902	10,7	157	G61102	12,3	191
4x1+1	G10603	11,0	173	G31903	11,6	191	G61103	13,2	231
6x1+1	G10604	11,8	212	G31904	12,5	235	G61104	14,2	286
9x1+1	G10605	14,5	292	G31905	15,4	323	G61105	17,7	394
11x1+1	G10606	14,9	332	G31906	15,8	369	G61106	18,2	450
13x1+1	G10607	15,6	374	G31907	16,6	417	G61107	19,1	509
18x1+1	G10608	17,2	480	G31908	18,3	623	G61108	21,2	658
20x1+1	G10609	18,0	524	G31909	19,2	586	G61109	22,3	719
23x1+1	G10610	19,9	595	G31910	21,2	666	G61110	24,7	818
26x1+1	G10611	20,4	747	G31911	21,7	733	G61111	25,2	900
29x1+1	G10612	21,0	715	G31912	22,4	802	G61112	26,1	986
32x1+1	G10613	21,8	781	G31913	23,3	877	G61113	27,2	1079
36x1+1	G10614	22,6	857	G31914	24,1	963	G61114	28,3	1192

BITNER CABLE FACTORY

YnHKGSLY PVC insulated and sheathed mining signal cable with individually screened conductors 150/250V; 300/500V; 0,6/1kV

Conductors/ cross section	YnHKGSLY 150/250V			YnHKGSLY 300/500V			YnHKGSLY 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1,5+1,5	G10615	9,7	114	G31915	10,3	123	G61115	11,1	138
2x1,5+1,5	G10616	10,2	142	G31916	10,9	154	G61116	11,7	174
3x1,5+1,5	G10617	11,0	173	G31917	11,7	187	G61117	12,8	215
4x1,5+1,5	G10618	11,9	210	G31918	12,6	229	G61118	13,7	263
6x1,5+1,5	G10619	12,8	261	G31919	13,6	288	G61119	14,9	390
9x1,5+1,5	G10620	15,8	360	G31920	16,9	420	G61120	18,6	450
11x1,5+1,5	G10621	16,2	412	G31921	17,4	448	G61121	19,1	514
13x1,5+1,5	G10622	17,0	467	G31922	18,3	506	G61122	20,1	2349
18x1,5+1,5	G10623	18,8	604	G31923	20,2	655	G61123	22,3	759
20x1,5+1,5	G10624	19,7	660	G31924	21,2	717	G61124	23,4	830
23x1,5+1,5	G10625	21,8	751	G31925	23,5	814	G61125	26,0	945
26x1,5+1,5	G10626	22,3	827	G31926	24,0	898	G61126	26,6	1042
29x1,5+1,5	G10627	23,0	905	G31927	24,8	984	G61127	27,6	1148
32x1,5+1,5	G10628	23,9	991	G31928	25,8	1078	G61128	28,8	1266
36x1,5+1,5	G10629	24,8	1090	G31929	26,9	1191	G61129	30,0	1397
1x2,5+2,5	G10630	10,7	142	G31930	11,3	154	G61130	12,2	171
2x2,5+2,5	G10631	11,2	181	G31931	11,9	197	G61131	12,9	219
3x2,5+2,5	G10632	12,1	223	G31932	12,9	245	G61132	14,2	272
4x2,5+2,5	G10633	13,1	273	G31933	14,0	302	G61133	15,2	334
6x2,5+2,5	G10634	14,2	344	G31934	15,1	379	G61134	16,5	419
9x2,5+2,5	G10635	17,7	477	G31935	18,9	527	G61135	20,8	582
11x2,5+2,5	G10636	18,2	550	G31936	19,5	608	G61136	21,4	672
13x2,5+2,5	G10637	19,1	626	G31937	20,5	693	G61137	22,5	766
18x2,5+2,5	G10638	21,1	816	G31938	22,7	903	G61138	25,1	998
20x2,5+2,5	G10639	22,2	893	G31939	23,8	989	G61139	26,3	1093
23x2,5+2,5	G10640	24,6	1017	G31940	26,5	1127	G61140	29,5	1260
26x2,5+2,5	G10641	25,2	1124	G31941	27,2	1252	G61141	30,3	1399
29x2,5+2,5	G10642	26,0	1234	G31942	28,2	1382	G61142	31,3	1535
32x2,5+2,5	G10643	27,1	1353	G31943	29,4	1516	G61143	32,7	1691
36x2,5+2,5	G10644	28,2	1498	G31944	30,6	1677	G61144	34,1	1869
1x4+4	G10645	12,1	190	G31945	12,5	198	G61145	13,3	215
2x4+4	G10646	12,8	247	G31946	13,2	259	G61146	14,1	280
3x4+4	G10647	13,9	309	G31947	14,4	323	G61147	15,5	353
4x4+4	G10648	15,1	382	G31948	15,6	400	G61148	16,7	435
6x4+4	G10649	16,4	486	G31949	17,0	510	G61149	18,2	554
9x4+4	G10650	20,6	678	G31950	21,4	713	G61150	23,0	775
11x4+4	G10651	21,2	787	G31951	22,0	828	G61151	23,7	900
13x4+4	G10652	22,3	900	G31952	23,2	947	G61152	24,9	1029
18x4+4	G10653	24,8	1181	G31953	25,8	1243	G61153	27,9	1358
20x4+4	G10654	26,1	1296	G31954	27,1	1364	G61154	29,4	1497
23x4+4	G10655	29,2	1491	G31955	30,4	1569	G61155	33,0	1722
26x4+4	G10656	29,9	1652	G31956	31,2	1746	G61156	33,8	1915
29x4+4	G10657	31,0	1824	G31957	32,4	1928	G61157	35,1	2113
32x4+4	G10658	32,4	2010	G31958	33,8	2123	G61158	36,7	2327
36x4+4	G10659	33,7	2227	G31959	35,2	2352	G61159	38,2	2576

YHKGSYFtZnyn

Armoured PVC insulated and sheathed mining signal cable
with individually screened conductors 300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper, PVC insulated conductors, individual conductor screening of tin-plated cooper wire braid, inner PVC sheath, with galvanised steel tape armouring, PVC outer sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 300/500V, 0,6/1 kV
Test voltage:
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Conductor screen: tin-plated cooper wire braid
Inner sheath: PVC
Armouring: galvanised steel tape
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 300/500 V
yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control systems in strip, open-pit and underground mines, out of areas with the risk of explosion, and in areas with methane explosion hazard class “a”, “b” or “c”, and in excavation sites categorised as class “A” or “B” coal dust explosion hazard.
The cable is suitable for installation in excavation sites with an inclination angle up to 45.

Sample cable marking:
YHKGSYFtZnyn 18x1,5+1,5mm^2 0,6/1 kV - 19-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

excavation sites with an inclination angle ≤45°

for potentially explosive areas

Conductors/ cross section	YHKGSYFtZnyn 300/500V			YHKGSYFtZnyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1+1	G32101	12,3	264	G61301	13,4	299
3x1+1	G32102	13,3	308	G61302	14,3	345
4x1+1	G32103	14,2	351	G61303	15,3	394
6x1+1	G32104	15,1	418	G61304	16,3	471
9x1+1	G32105	18,5	570	G61305	20,2	644
11x1+1	G32106	18,9	627	G61306	20,7	711
13x1+1	G32107	19,7	296	G61307	21,9	805
18x1+1	G32108	21,9	870	G61308	24,0	991
20x1+1	G32109	22,8	939	G61309	25,0	1070
23x1+1	G32110	24,9	1058	G61310	28,7	1428
26x1+1	G32111	25,4	1140	G61311	29,2	1527
29x1+1	G32112	27,4	1439	G61312	30,1	1637
32x1+1	G32113	28,2	1539	G61313	31,5	1782
36x1+1	G32114	29,2	1662	G61314	32,5	1926

BITNER CABLE FACTORY

YHKGSYFtZnyn

Armoured PVC insulated and sheathed mining signal cable
with individually screened conductors 300/500V; 0,6/1kV

Conductors/ cross section	YHKGSYFtZnyn 300/500V			YHKGSYFtZnyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1,5+1,5	G32116	13,2	303	G61316	13,8	326
3x1,5+1,5	G32117	14,0	351	G61317	14,8	379
4x1,5+1,5	G32118	15,0	402	G61318	15,8	435
6x1,5+1,5	G32119	16,0	484	G61319	17,4	541
9x1,5+1,5	G32120	19,7	663	G61320	21,0	721
11x1,5+1,5	G32121	20,2	736	G61321	22,0	820
13x1,5+1,5	G32122	21,3	825	G61322	22,9	908
18x1,5+1,5	G32123	23,5	1032	G61323	25,0	1126
20x1,5+1,5	G32124	24,5	1116	G61324	27,4	1427
23x1,5+1,5	G32125	28,1	1476	G61325	29,9	1607
26x1,5+1,5	G32126	28,6	1583	G61326	30,7	1738
29x1,5+1,5	G32127	29,4	1701	G61327	31,8	1884
32x1,5+1,5	G32128	30,6	1836	G61328	32,9	2019
36x1,5+1,5	G32129	31,8	2006	G61329	34,0	2189
2x2,5+2,5	G32131	13,8	349	G61331	14,7	381
3x2,5+2,5	G32132	14,8	409	G61332	15,8	447
4x2,5+2,5	G32133	15,8	473	G61333	17,4	534
6x2,5+2,5	G32134	17,4	594	G61334	18,6	652
9x2,5+2,5	G32135	21,0	797	G61335	23,1	898
11x2,5+2,5	G32136	22,0	911	G61336	23,7	1003
13x2,5+2,5	G32137	22,9	1015	G61337	24,7	1117
18x2,5+2,5	G32138	25,0	1270	G61338	28,4	1618
20x2,5+2,5	G32139	27,4	1587	G61339	29,6	1747
23x2,5+2,5	G32140	29,9	1790	G61340	32,8	2002
26x2,5+2,5	G32141	30,7	1943	G61341	33,4	2159
29x2,5+2,5	G32142	31,8	2112	G61342	34,5	2328
32x2,5+2,5	G32143	32,9	2270	G61343	36,1	2536
36x2,5+2,5	G32144	34,0	2470	G61344	37,3	2759
2x4+4	G32146	15,4	439	G61346	17,0	499
3x4+4	G32147	16,7	531	G61347	18,4	601
4x4+4	G32148	18,2	627	G61348	19,9	702
6x4+4	G32149	19,5	777	G61349	21,8	890
9x4+4	G32150	24,3	1075	G61350	28,1	1423
11x4+4	G32151	25,0	1211	G61351	28,8	1582
13x4+4	G32152	27,3	1566	G61352	30,1	1757
18x4+4	G32153	29,9	1950	G61353	33,5	2222
20x4+4	G32154	31,7	2141	G61354	35,2	2420
23x4+4	G32155	34,9	2434	G61355	38,9	2756
26x4+4	G32156	35,6	2637	G61356	39,8	3002
29x4+4	G32157	36,9	2872	G61357	41,3	3267
32x4+4	G32158	38,2	3097	G61358	42,8	3522
36x4+4	G32159	39,7	3398	G61359	44,5	3863

YHKGSYFoyn

Armoured PVC insulated and sheathed mining signal cable
with individually screened conductors 300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper, PVC insulated conductors, individual conductor screening of tin-plated cooper wire braid, inner PVC sheath, with round steel wire armouring, PVC outer sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 300/500V, 0,6/1 kV
Test voltage:
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Conductor screen: tin-plated cooper wire braid
Inner sheath: PVC
Armour: round galvanised steel wires
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 300/500 V
yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control systems in strip, open-pit and underground mines, out of areas with the risk of explosion, and in areas with methane explosion hazard class “a”, “b” or “c”, and in excavation sites categorised as class “A” or “B” coal dust explosion hazard.
The cable is suitable for installation in shafts and excavation sites with an inclination angle up to 90.

Sample cable marking: YHKGSYFoyn 18x1,5+1,5mm^2 0,6/1 kV - 19-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

shaft cable

for potentially explosive areas

Conductors/ cross section	YHKGSYFoyn 300/500V			YHKGSYFoyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1+1	G32501	12,3	264	G61701	13,4	299
3x1+1	G32502	13,3	308	G61702	14,3	345
4x1+1	G32503	14,2	351	G61703	15,3	394
6x1+1	G32504	15,1	418	G61704	16,3	471
9x1+1	G32505	18,5	570	G61705	20,2	644
11x1+1	G32506	18,9	627	G61706	20,7	711
13x1+1	G32507	19,7	692	G61707	21,9	805
18x1+1	G32508	21,9	870	G61731	24,0	991
20x1+1	G32509	22,8	939	G61732	25,0	1070
23x1+1	G32510	24,9	1058	G61733	27,8	1232
26x1+1	G32511	25,4	1140	G61734	28,4	1327
29x1+1	G32534	26,6	1253	G61735	29,2	1431
32x1+1	G32535	27,5	1346	G61736	30,7	1566
36x1+1	G32536	28,4	1463	G61737	31,7	1702

BITNER CABLE FACTORY

YHKGSYFoyn

Armoured PVC insulated and sheathed mining signal cable
with individually screened conductors 300/500V; 0,6/1kV

Conductors/ cross section	YHKGSYFoyn 300/500V			YHKGSYFoyn 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
2x1,5+1,5	G32513	13,2	303	G61709	13,8	326
3x1,5+1,5	G32514	14,0	351	G61710	14,8	379
4x1,5+1,5	G32515	15,0	402	G61711	15,8	435
6x1,5+1,5	G32516	16,0	484	G61712	17,4	541
9x1,5+1,5	G32517	19,7	663	G61713	21,0	721
11x1,5+1,5	G32518	20,2	736	G61714	22,0	820
13x1,5+1,5	G32519	21,3	825	G61715	22,9	908
18x1,5+1,5	G32537	23,5	1032	G61738	25,0	1126
20x1,5+1,5	G32538	24,5	1116	G61739	26,5	1241
23x1,5+1,5	G32539	27,2	1284	G61740	29,1	1402
26x1,5+1,5	G32540	27,7	1388	G61741	29,6	1516
29x1,5+1,5	G32541	28,6	1499	G61742	31,0	1665
32x1,5+1,5	G32542	29,5	1615	G61743	32,1	1793
36x1,5+1,5	G32543	31,0	1788	G61744	33,1	1954
2x2,5+2,5	G32521	13,8	349	G61717	14,7	381
3x2,5+2,5	G32522	14,8	409	G61718	15,8	447
4x2,5+2,5	G32523	15,8	473	G61719	17,4	534
6x2,5+2,5	G32524	17,4	594	G61720	18,6	652
9x2,5+2,5	G32525	21,0	797	G61721	23,1	898
11x2,5+2,5	G32526	22,0	911	G61722	23,7	1003
13x2,5+2,5	G32527	22,9	1015	G61723	24,7	1117
18x2,5+2,5	G32544	25,0	1270	G61745	27,5	1425
20x2,5+2,5	G32545	26,5	1401	G61746	28,8	1545
23x2,5+2,5	G32546	29,1	1584	G61747	32,0	1776
26x2,5+2,5	G32547	29,6	1721	G61748	32,6	1928
29x2,5+2,5	G32548	31,0	1893	G61749	33,6	2089
32x2,5+2,5	G32549	32,1	2044	G61750	35,3	2287
36x2,5+2,5	G32550	33,1	2235	G61751	36,5	2500
2x4+4	G32529	15,4	439	G61725	17,0	499
3x4+4	G32530	16,7	531	G61726	18,4	601
4x4+4	G32531	18,2	665	G61727	19,9	702
6x4+4	G32532	19,5	777	G61728	21,8	890
9x4+4	G32533	24,3	1075	G61752	27,2	1231
11x4+4	G32551	25,0	1211	G61753	28,0	1385
13x4+4	G32552	26,5	1380	G61754	29,2	1551
18x4+4	G32553	29,1	1745	G61755	32,6	1991
20x4+4	G32554	30,8	1924	G61756	34,1	2163
23x4+4	G32555	33,9	2179	G61757	38,0	2485
26x4+4	G32556	34,7	2391	G61758	38,8	2709
29x4+4	G32557	36,0	2617	G61759	40,5	2980
32x4+4	G32558	37,3	2831	G61760	41,9	3223
36x4+4	G32559	38,7	3106	G61761	43,7	3553

YnHKGSYkon

Screened PVC insulated and sheathed mining signal cable
with individually screened conductors 300/500V; 0,6/1kV

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining signal cable with cooper, PVC insulated conductors, individual conductor screening and common screen of tin-plated cooper wires, PVC sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 300/500V**,** 0,6/1 kV
Test voltage:
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Conductor screen: tin-plated cooper wire braid
Stranding element lapping: polyester tape
Stranding element screen: tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 300/500 V
yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control systems in strip, open-pit and underground mines, out of areas with the risk of explosion, and in areas with methane explosion hazard class “a”, “b” or “c”, and in excavation sites categorised as class “A” or “B” coal dust explosion hazard.

Sample cable marking: YnHKGSYkon 13x1,5+1,5mm^2 0,6/1 kV - 14-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

for potentially explosive areas

Conductors/ cross section	YnHKGSYkon 300/500V			YnHKGSYkon 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1+1	GG33400	9,6	116	G62800	10,4	131
2x1+1	GG33401	10,1	144	G62801	11,0	163
3x1+1	GG33402	10,9	171	G62802	12,0	195
4x1+1	GG33403	11,4	198	G62803	12,5	226
6x1+1	GG33404	12,2	242	G62804	13,6	284
9x1+1	GG33405	14,9	332	G62805	16,7	389
11x1+1	GG33406	15,4	376	G62806	17,2	439
13x1+1	GG33407	16,1	423	G62807	18,0	494
18x1+1	GG33408	17,7	540	G62808	19,6	622
20x1+1	GG33409	18,5	593	G62809	20,7	691
23x1+1	GG33410	20,5	669	G62810	22,8	771
26x1+1	GG33411	21,0	733	G62811	23,3	846
29x1+1	GG33412	21,6	798	G62812	24,3	931
32x1+1	GG33413	22,4	869	G62813	25,2	1014
36x1+1	GG33414	23,2	954	G62814	26,1	1112

BITNER CABLE FACTORY

YnHKGSYkon

Screened PVC insulated and sheathed mining signal cable
with individually screened conductors 300/500V; 0,6/1kV

Conductors/ cross section	YnHKGSYkon 300/500V			YnHKGSYkon 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1,5+1,5	GG33415	10,2	135	G62815	10,9	147
2x1,5+1,5	GG33416	10,8	170	G62816	11,4	186
3x1,5+1,5	GG33417	11,6	204	G62817	12,4	224
4x1,5+1,5	GG33418	12,2	238	G62818	13,2	265
6x1,5+1,5	GG33419	13,3	300	G62819	14,2	328
9x1,5+1,5	GG33420	16,1	404	G62820	17,5	450
11x1,5+1,5	GG33421	16,8	468	G62821	18,0	512
13x1,5+1,5	GG33422	17,5	526	G62822	18,8	577
18x1,5+1,5	GG33423	19,2	666	G62823	20,8	739
20x1,5+1,5	GG33424	20,3	741	G62824	21,8	812
23x1,5+1,5	GG33425	22,2	827	G62825	24,1	916
26x1,5+1,5	GG33426	22,7	908	G62826	24,6	1006
29x1,5+1,5	GG33427	23,4	991	G62827	25,4	1098
32x1,5+1,5	GG33428	24,5	1091	G62828	26,4	1197
36x1,5+1,5	GG33429	25,4	1198	G62829	27,4	1316
1x2,5+2,5	GG33430	10,9	163	G62830	11,7	179
2x2,5+2,5	GG33431	11,4	209	G62831	12,4	231
3x2,5+2,5	GG33432	12,4	255	G62832	13,7	287
4x2,5+2,5	GG33433	13,2	302	G62833	14,3	334
6x2,5+2,5	GG33434	14,2	378	G62834	15,4	418
9x2,5+2,5	GG33435	17,5	521	G62835	19,1	576
11x2,5+2,5	GG33436	18,0	597	G62836	19,7	659
13x2,5+2,5	GG33437	18,8	675	G62837	20,8	754
18x2,5+2,5	GG33438	20,8	869	G62838	22,7	961
20x2,5+2,5	GG33439	21,8	958	G62839	23,8	1059
23x2,5+2,5	GG33440	24,1	1079	G62840	26,4	1193
26x2,5+2,5	GG33441	24,6	1189	G62841	27,0	1315
29x2,5+2,5	GG33442	25,4	1300	G62842	28,1	1449
32x2,5+2,5	GG33443	26,4	1421	G62843	29,2	1583
36x2,5+2,5	GG33444	27,4	1565	G62844	30,2	1743
1x4+4	GG33445	12,4	216	G62845	13,8	248
2x4+4	GG33446	13,2	288	G62846	14,6	325
3x4+4	GG33447	14,4	354	G62847	16,0	399
4x4+4	GG33448	15,2	415	G62848	17,0	475
6x4+4	GG33449	16,3	526	G62849	18,4	599
9x4+4	GG33450	20,3	725	G62850	22,8	826
11x4+4	GG33451	21,0	844	G62851	23,5	951
13x4+4	GG33452	22,1	958	G62852	24,9	1089
18x4+4	GG33453	24,4	1239	G62853	27,3	1395
20x4+4	GG33454	25,5	1367	G62854	28,8	1551
23x4+4	GG33455	28,3	1538	G62855	31,9	1746
26x4+4	GG33456	28,9	1700	G62856	32,6	1928
29x4+4	GG33457	29,9	1863	G62857	33,8	2111
32x4+4	GG33458	31,0	2039	G62858	35,0	2310
36x4+4	GG33459	32,4	2262	G62859	36,6	2563

YnHKGSLYkon

Screened PVC insulated and sheathed mining signal cable with individually screened conductors and common screen 150/250V; 300/500V; 0,6/1kV

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining signal cable with multi-stranded cooper, PVC insulated conductors, individual conductor screening and common screen of tin-plated cooper wires, PVC sheath with increased flame propagation resistance
Operating temperature: -40°C to 70°C
Minimum installation temperature: -5°C
Operating voltage: 150/250V, 300/500V, 0,6/1 kV
Test voltage:
1,5 kV for 150/250 V
2,0 kV for 300/500 V
3,5 kV for 0,6/1 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: natural or black with digit print; yellow-green conductor in the outer layer
Conductor screen: tin-plated cooper wire braid
Stranding element lapping: polyester tape
Stranding element screen: tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour:
grey for 150/250 V, 300/500 V yellow for 0,6/1 kV

Application:

Cables intended for supplying and controlling power control, safety and control systems in strip, open-pit and underground mines, out ofareas with the risk of explosion, and in areas with methane explosion hazard class “a”, “b” or “c”, and in excavation sites categorised as class “A” or “B” coal dust explosion hazard.

Sample cable marking: YnHKGSLYkon 13x1,5+1,5mm^2 0,6/1 kV - 14-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 0,6/1 kV


mining applications


high flexibility


PN-EN 60332-1


IEC 60332-3 PN-EN 60332-3

non-flammable sheath

for potentially explosive areas

Conductors/ cross section	YnHKGSLYkon 150/250V			YnHKGSLYkon			YnHKGSLYkon 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1+1	G10900	9,2	108	GG33300	10,0	123	G62700	10,9	139
2x1+1	G10901	9,6	134	GG33301	10,5	155	G62701	11,4	174
3x1+1	G10902	10,4	159	GG33302	11,4	187	G62702	12,4	208
4x1+1	G10903	10,9	184	GG33303	12,1	218	G62703	13,2	247
6x1+1	G10904	11,6	225	GG33304	13,0	267	G62704	14,2	303
9x1+1	G10905	14,2	309	GG33305	15,9	364	G62705	17,5	414
11x1+1	G10906	14,6	350	GG33306	16,3	411	G62706	18,0	470
13x1+1	G10907	15,2	392	GG33307	17,1	461	G62707	18,8	528
18x1+1	G10908	16,8	501	GG33308	18,8	586	G62708	20,8	674
20x1+1	G10909	17,5	550	GG33309	19,7	643	G62709	21,8	740
23x1+1	G10910	19,2	350	GG33310	21,7	725	G62710	24,1	835
26x1+1	G10911	19,8	680	GG33311	22,1	793	G62711	24,6	915
29x1+1	G10912	20,4	740	GG33312	22,9	864	G62712	25,4	997
32x1+1	G10913	21,2	806	GG33313	23,7	940	G62713	26,4	1085
36x1+1	G10914	21,9	884	GG33314	24,6	1031	G62714	27,4	1191

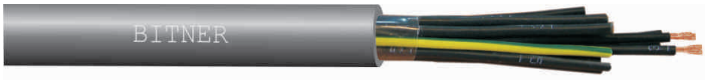
BITNER CABLE FACTORY

YnHKGSLYkon

Screened PVC insulated and sheathed mining signal cable with individually screened conductors and common screen 150/250V; 300/500V; 0,6/1kV

Conductors/ cross section	YnHKGSLYkon 150/250V			YnHKGSLYkon			YnHKGSLYkon 0,6/1kV		
	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]	Cat. no.	Calculated OD [mm]	Calculated cable weight [kg/km]
1x1,5+1,5	G10915	10,0	131	GG33315	10,9	147	G62715	11,7	164
2x1,5+1,5	G10916	10,5	165	GG33316	11,4	186	G62716	12,4	207
3x1,5+1,5	G10917	11,4	198	GG33317	12,4	224	G62717	13,7	256
4x1,5+1,5	G10918	11,9	230	GG33318	13,2	265	G62718	14,3	297
6x1,5+1,5	G10919	13,0	290	GG33319	14,2	328	G62719	15,4	368
9x1,5+1,5	G10920	15,7	392	GG33320	17,5	450	G62720	19,1	505
11x1,5+1,5	G10921	16,4	453	GG33321	18,0	512	G62721	19,7	575
13x1,5+1,5	G10922	17,2	510	GG33322	18,8	577	G62722	20,8	656
18x1,5+1,5	G10923	18,7	645	GG33323	20,8	739	G62723	22,7	831
20x1,5+1,5	G10924	19,6	710	GG33324	21,8	812	G62724	23,8	914
23x1,5+1,5	G10925	21,6	800	GG33325	24,1	916	G62725	26,4	1030
26x1,5+1,5	G10926	22,1	879	GG33326	24,6	1006	G62726	27,0	1132
29x1,5+1,5	G10927	22,9	960	GG33327	25,4	1098	G62727	28,1	1247
32x1,5+1,5	G10928	23,9	1057	GG33328	26,4	1197	G62728	29,2	1360
36x1,5+1,5	G10929	24,8	1161	GG33329	27,4	1316	G62729	30,2	1493
1x2,5+2,5	G10930	10,9	163	GG33330	11,7	179	G62730	12,4	193
2x2,5+2,5	G10931	11,4	209	GG33331	12,6	231	G62731	13,2	253
3x2,5+2,5	G10932	12,4	255	GG33332	13,7	283	G62732	14,4	308
4x2,5+2,5	G10933	13,2	302	GG33333	14,7	338	G62733	15,2	359
6x2,5+2,5	G10934	14,2	378	GG33334	15,9	425	G62734	16,3	449
9x2,5+2,5	G10935	17,5	521	GG33335	19,7	587	G62735	20,3	619
11x2,5+2,5	G10936	18,0	597	GG33336	20,3	671	G62736	21,0	718
13x2,5+2,5	G10937	18,8	675	GG33337	21,2	760	G62737	22,1	811
18x2,5+2,5	G10938	20,8	869	GG33338	23,6	982	G62738	24,4	1043
20x2,5+2,5	G10939	21,8	958	GG33339	24,7	1082	G62739	25,5	1149
23x2,5+2,5	G10940	24,1	1079	GG33340	27,4	1221	G62740	28,3	1294
26x2,5+2,5	G10941	24,6	1189	GG33341	28,2	1358	G62741	28,9	1426
29x2,5+2,5	G10942	25,4	1300	GG33342	29,3	1505	G62742	29,9	1559
32x2,5+2,5	G10943	26,4	1421	GG33343	30,5	1643	G62743	31,0	1703
36x2,5+2,5	G10944	27,4	1565	GG33344	31,9	1824	G62744	32,4	1889
1x4+4	G10945	13,0	230	GG33345	14,5	263	G62745	14,9	273
2x4+4	G10946	14,0	307	GG33346	13,5	289	G62746	15,8	357
3x4+4	G10947	15,2	376	GG33347	14,8	358	G62747	17,3	438
4x4+4	G10948	16,0	440	GG33348	15,9	434	G62748	18,4	522
6x4+4	G10949	17,4	565	GG33349	17,2	549	G62749	19,9	659
9x4+4	G10950	21,6	779	GG33350	21,5	763	G62750	25,0	919
11x4+4	G10951	22,3	896	GG33351	22,1	879	G62751	25,8	1056
13x4+4	G10952	23,3	1017	GG33352	23,2	1000	G62752	27,1	1198
18x4+4	G10953	25,8	1315	GG33353	25,8	1303	G62753	29,9	1548
20x4+4	G10954	27,1	1452	GG33354	27,1	1447	G62754	31,3	1707
23x4+4	G10955	30,0	1633	GG33355	30,5	1661	G62755	34,7	1921
26x4+4	G10956	30,7	1806	GG33356	31,1	1831	G62756	35,7	2136
29x4+4	G10957	31,9	1990	GG33357	32,4	2024	G62757	37,0	2339
32x4+4	G10958	33,1	2177	GG33358	33,7	2213	G62758	38,4	2558
36x4+4	G10959	34,4	2402	GG33359	35,2	2455	G62759	40,1	2837

YnStY-G(żo) Flexible mining control cables 300/500V



RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining control cable with cooper, PVC insulated and sheathed conductors, with increased flame propagation resistance
Operating temperature range:
for permanent installation: - 30°C to 70°C
for portable installation: -5°C to 70°C
Maximum power conductor temperature: 70°C
Maximum conductor temperature in short circuit: 160°C
Operating voltage: 300/500V
Test voltage: 2 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: PVC
Conductor colours: with digit print; yellow-green conductor in the outer layer
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN- EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables designed for supplying stationary and portable electrical equipment and machinery operating in open-pit, strip and underground mines.

Sample cable marking:
YnStY - Gżo 3x1,5mm^2 300/500V - 3-conductor cable, nominal power and control conductor cross section: 1,5 mm^2, voltage rating: 300/500V


mining applications


high flexibility


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Cat. no.	Conductors/ cross section [nxmm^2]	Calculated OD [mm]	Calculated cable weight [kg/km]
G32931	2x0,75	6,6	62
G32900	2x1	6,9	70
G32911	2x1,5	7,4	86
G32922	2x2,5	9,3	136
G32932	3x0,75	7,0	74
G32901	3x1	7,2	83
G32912	3x1,5	7,8	105
G32923	3x2,5	9,8	165
G32933	4x0,75	7,6	88
G32902	4x1	7,9	100
G32913	4x1,5	9,1	139
G32924	4x2,5	11,1	211
G32934	5x0,75	8,8	118
G32903	5x1	9,2	134
G32914	5x1,5	9,9	168

BITNER CABLE FACTORY

YnStY-G(żo) Flexible mining control cables 300/500V

Cat. no.	Conductors/ cross section [nxmm^2]	Calculated OD [mm]	Calculated cable weight [kg/km]
G32925	5x2,5	12,1	256
G32935	7x0,75	9,6	139
G32904	7x1	9,9	158
G32915	7x1,5	11,2	214
G32926	7x2,5	13,1	307
G32936	10x0,75	12,1	204
G32943	10x1	12,6	233
G32916	10x1,5	13,9	304
G32927	10x2,5	16,5	442
G32937	12x0,75	12,7	234
G32905	12x1	13,2	268
G32917	12x1,5	14,3	342
G32928	12x2,5	17,6	527
G32938	14x0,75	13,3	261
G32906	14x1	13,8	299
G32918	14x1,5	15,0	373
G32929	14x2,5	18,5	538
G32939	18x0,75	14,7	328
G32908	18x1	15,9	401
G32919	18x1,5	17,3	514
G32930	18x2,5	21,3	796
G32940	25x0,75	18,0	468
G32910	25x1	19,6	577
G32921	25x1,5	21,2	732
G32948	25x2,5	25,8	1113
G32941	34x0,75	20,8	612
G32944	34x1	21,7	705
G32946	34x1,5	23,6	908
G32949	34x2,5	28,7	1381
G32942	42x0,75	23,1	737
G32945	42x1	24,1	852
G32947	42x1,5	26,3	1104
G32950	42x2,5	32,1	1682

YnStYekżi-G(żo)

Flexible mining control cable with individually screened conductors 300/500V

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Mining control cable with multi-stranded cooper, PVC insulated conductors, with or without protective conductor, PVC sheath with increased flame propagation resistance
Operating temperature range:
for permanent installation: - 30°C to 70°C
for portable installation: -5°C to 70°C
Maximum power conductor temperature: 70°C
Maximum conductor temperature in short circuit: 160°C
Operating voltage: 300/500V
Test voltage: 2 kV
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: special PVC
Conductor marking: black with digit print; yellow-green conductor in the outer layer
Conductor screen: tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables intended for supplying and controlling power control, safety and control systems in strip, open-pit and underground mines, out of areas with the risk of explosion, and in areas with methane explosion hazard class “a”, “b” or “c”, and in excavation sites categorised as class “A” or “B” coal dust explosion hazard.

Sample cable marking: YnStYekżi- Gżo 7 x 1,5mm^2 300/500V - 7-conductor cable, nominal power and protective conductor cross section: 1,5 mm^2, voltage rating: 300/500V


mining applications


high flexibility


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

for potentially explosive areas

Cat. no.	Conductors/ cross section [nxmm^2]	Calculated OD [mm]	Calculated cable weight [kg/km]
GG33100	2x1	8,6	85
GG33101	2x1,5	9,4	104
GG33102	2x2,5	10,2	131
GG33103	2x4	12,8	201
GG33104	3x1	9,1	111
GG33105	3x1,5	9,9	139
GG33106	3x2,5	10,8	178
GG33107	3x4	13,6	275
GG33108	4x1	9,9	140
GG33109	4x1,5	10,8	175
GG33110	4x2,5	11,8	228
GG33111	4x4	14,9	353
GG33112	5x1	10,8	169
GG33113	5x1,5	11,9	213
GG33114	5x2,5	13,2	283

BITNER CABLE FACTORY

YnStYekżi-G(żo)

Flexible mining control cable with individually screened conductors 300/500V

Cat. no.	Conductors/ cross section [nxmm^2]	Calculated OD [mm]	Calculated cable weight [kg/km]
GG33115	5x4	16,6	439
GG33116	7x1	11,8	223
GG33117	7x1,5	13,2	289
GG33118	7x2,5	14,4	378
GG33119	7x4	18,2	589
GG33120	10x1	15,2	319
GG33121	10x1,5	17,0	412
GG33122	10x2,5	18,6	541
GG33123	10x4	23,6	842
GG33124	12x1	15,7	371
GG33125	12x1,5	17,5	480
GG33126	12x2,5	19,2	633
GG33127	12x4	24,4	988
GG33128	14x1	16,7	432
GG33129	14x1,5	18,4	550
GG33130	14x2,5	20,2	728
GG33131	14x4	25,9	1149
GG33132	19x1	18,6	567
GG33133	19x1,5	20,6	725
GG33134	19x2,5	22,8	974
GG33135	19x4	29,0	1525
GG33136	21x1	19,6	622
GG33137	21x1,5	21,9	806
GG33138	21x2,5	24,0	1070
GG33139	21x4	30,8	1690
GG33140	24x1	22,0	718
GG33141	24x1,5	24,4	919
GG33142	24x2,5	27,0	1233
GG33143	24x4	34,6	1944
GG33144	27x1	22,5	795
GG33145	27x1,5	25,1	1031
GG33146	27x2,5	27,6	1370
GG33147	27x4	35,4	2163
GG33148	30x1	23,3	874
GG33149	30x1,5	26,0	1134
GG33150	30x2,5	28,6	1511
GG33151	30x4	36,7	2385
GG33152	33x1	24,2	955
GG33153	33x1,5	27,1	1239
GG33154	33x2,5	30,0	1665
GG33155	33x4	38,4	2627
GG33156	37x1	25,4	1070
GG33157	37x1,5	28,2	1377
GG33158	37x2,5	31,2	1852
GG33159	37x4	40,0	2923

L-2YYQY Armoured PVC insulated mining control cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
EMAG

Technical data:

Control cable with PVC insulated multi-stranded conductors, inner PVC sheath, round galvanised steel wire armour, PVC outer sheath
Operating temperature:
for permanent installation: - 30°C to 70°C
for portable installation: - 5°C to 70°C
Operating voltage: 300/500V
Test voltage: 2 kV applied between the power and other conductors shorted together and with screens.
1 kV applied between the control (or central) conductor and screen.
Conductor resistance: as per table
Insulation resistance: min. 1500 Mkm
Control conductor pair effective capacitance ≤ 80 nF/km
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: insulating polyethylene
Conductor colours:
power conductors: blue and black
control conductors:
1st pair – blue and grey
2nd pair – blue and white
central conductor (or pair): brown or blue and brown
Control conductor lapping:
polyester film
Screen on control conductor pairs: tin-plated cooper wire braid
Screened control conductor lapping:
polyester film
Inner sheath: PVC
Armour: tin-plated steel wire braid
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: blue

Application:

Cables for intrinsically safe circuits in underground mines. The cable is suitable for:
-strip and open-pit mines, in areas where no explosion hazard exists, and underground mines without methane presence,
- intrinsically safe circuits
open-pit and strip mines, in areas with the risk of explosion,
- intrinsically safe circuits underground mines,
in areas categorised as class “A” coal dust explosion hazard.

Sample cable marking:
L-2YYQY 2 x 6 + 2 x (2x0,5) + 1 x 0,5 mm^2
- cable of nominal power conductor cross section: 6 mm^2, protective and control conductor cross section: 0,5 mm^2, voltage rating: 300/500V


mining applications


high flexibility


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath


UV resistant


oil-resistant

Power conductor cross section	Resistance at 20°C	Long-term current carrying capacity at 20°C
[mm^2]	[Ω/km]	[MΩ/km]
6	3,3	43
10	1,91	57
16	1,21	78

Cat. no	Conductors/ cross section [nxmm^2]	Power conductors [n]	Control conductors [n]	Central conductors [n]	Power conductor cross section [mm^2]	Control conductors cross section [mm^2]	Central conductors cross section [mm^2]	Cable OD [mm]	Calculated cable weight [kg/km]
GG33200	2x6+2x(2x0,5)+1x0,5	2	4	1	6	0,5	0,5	18,6	540
GG33201	2x10+2x(2x0,5)+1x0,5				10	0,5	0,5	19,4	620
GG33202	2x16+2x(2x0,5)+1x0,5				6	0,5	0,5	23,4	780

BITNER CABLE FACTORY

Mining signal cable technical data

Long-term current carrying capacity of signal cables buried separately at an ambient temperature of 20°C

Conductors in cable	Long-term current carrying capacity [A] of cable cross section [mm^2]			
	1,0	1,5	2,5	4
7	11	14	19	24
10	9	12	16	20
14	8	11	14	-
19	7	10	12	-
24	6	8	11	-
30	5	7	11	-
37	5	6	10	-
48	5	6	-	-
61	5	6	-	-
75	5	6	-	-

Long-term current carrying capacity of signal cables installed in overhead lines, not exposed to sunlight, at 25°C
Long-term current carrying capacity [A] of cable cross section [mm^2]

Conductors in cable	Long-term current carrying capacity [A] of cable cross section [mm^2]					
	1,0	1,5	2,5	4	6	10
3	15	19	27	33	40	62
4	15	19	27	33	40	62
5	12	14	20	25	30	46
7	10	13	18	23	26	40
10	8	11	15	20	22	28
14	8	10	14	16	-	-
19	7	9	12	15	-	-
24	6	8	11	13	-	-
30	5	7	11	13	-	-
37	5	6	11	13	-	-
48	5	6	11	13	-	-
61	5	6	-	-	-	-
75	5	6	-	-	-	-

Inductivity of PVC insulated cables at 20°C

Nominal conductor cross section [mm^2]	Max inductivity [mH/km]	
	Non-armoured cables	Armoured cables
1,0	0,83	1,04
1,5	0,79	0,98
2,5	0,75	0,92
4	0,72	0,93
6	0,68	0,89
10	0,64	0,82

Capacitance of PVC insulated control cables at 20°C

Nominal conductor cross section [mm^2]	Capacitance - max values [µF/km]		
	conductor-conductor	conductor – armour connected with	conductor - armour
1,0	0,12	0,20	0,20
1,5	0,14	0,20	0,20
2,5	0,18	0,30	0,30
4	0,23	0,35	0,35
6	0,28	0,50	0,50
10	0,36	0,70	0,70

CHAPTER VI

MINING TELECOMUNICATION CABLES

YnTKGX Mining telecommunication cable

RoHS 2002/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining telecommunication cable with copper, PE insulated conductors, PVC sheath with increased flame propagation resistance.
Loop and conductor pair resistance at 20C: max. 73,6 Ω/km
Insulation resistance: min.1500 MΩxkm.
Effective capacitance of each pair: max 55 nF/km
Capacitance asymmetry between adjoining pairs:
for cable section = 500m: max 500 pF
Test voltage: 700 V AC or 1000 V DC
Operating temperature: -5°C to 70°C
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: insulating polyethylene
Conductor colours: as per table at the end of this section
Stranding element: conductors twisted in pairs, bunched pairs marked with tape in different colours or with following number, bunches stranded in layers to form the stranding element
Stranding element lapping: polyester film
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables for telecommunications networks in strip and open-pit mines in areas where no explosion hazard exists, and underground mines, in areas without methane, and in excavation sites categorised as class “A” coal dust explosion hazard.

Sample cable marking: YnTKGX 10 x 2 x 0,8mm – 10-pair cable, nominal conductor diameter: 0,8 mm


mining applications


telecom cable


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Cat. no.	Pairs x conductor dia. [n x 2 x mm]	Calculated OD [mm]	Calculated cable weight [kg/km]
GT0001	5x2x0,8	10,6	146
GT0002	10x2x0,8	13,5	232
GT0003	16x2x0,8	16,0	327
GT0004	24x2x0,8	18,3	442
GT0005	33x2x0,8	21,1	575
GT0006	56x2x0,8	25,4	908
GT0007	60x2x0,8	25,8	958
GT0008	100x2x0,8	33,2	1504
GT0009	120x2x0,8	36,3	1805
GT0010	200x2x0,8	45,5	2932

BITNER CABLE FACTORY

YTKGXFtZnyn Armoured mining telecommunicationcable

RoHS 2002/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining telecommunication cable with PE insulated cooper conductors, PVC inner sheath, galvanised steel tape armouring, PVC outer sheath with increased flame propagation resistance
Conductor pair loop resistance at 20C: max. 73,6 Ω/km
Insulation resistance: min. 1500 MΩxkm
Effective capacitance of each pair: max. 55 nF/km
Capacitance asymmetry between adjoining pairs:
for cable section = 500m: max. 500 pF
Test voltage: 700 V AC or 1000 V DC
Operating temperature: -5°C to 70°C
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: insulating polyethylene
Conductor colours: as per table at the **end of this section**
Stranding element: conductors twisted in pairs, bunched pairs marked with tape in different colours or with following number, bunches stranded in layers to form the stranding element
Stranding element lapping: polyester film
Inner sheath: PVC
Armour: galvanised steel tape
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables for telecommunications networks in strip and open-pit mines in areas where no explosion hazard exists, and underground mines, in areas without methane, and in excavation sites categorised as class “A” coal dust explosion hazard. The cables can be installed in excavation sites with an inclination angle up to 45

Sample cable marking:
YTKGXFtZnyn 10 x 2 x 0,8mm – 10-pair
Cable, nominal conductor cross section: 0,8 mm


mining applications


telecom cable


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

excavation sites with an inclination angle ≤45°

Cat. no.	Pairs x conductor dia. [n x 2 x mm]	Calculated OD [mm]	Calculated cable weight [kg/km]
GT0150	5x2x0,8	14,0	316
GT0151	10x2x0,8	17,0	452
GT0152	16x2x0,8	19,7	592
GT0153	24x2x0,8	22,1	749
GT0154	33x2x0,8	25,1	937
GT0155	56x2x0,8	30,6	1551
GT0156	60x2x0,8	31,0	1611
GT0157	100x2x0,8	38,8	2373
GT0158	120x2x0,8	42,1	2769
GT0159	200x2x0,8	51,4	4130

YTKGXFoyn

Armoured mining telecommunication cable

RoHS 2002/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining telecommunication cable with cooper conductors in PE insulation, PVC inner sheath, round steel wire armouring, PVC outer sheath with increased flame propagation resistance
Conductor pair loop resistance at 20C: max. 73,6 Ω/km
Insulation resistance: min. 1500 MΩxkm
Effective capacitance of each pair: max. 55 nF/km
Capacitance asymmetry between adjoining pairs:
for cable section = 500m: max. 500 pF
Test voltage: 700 V AC or 1000 V DC
Operating temperature: -5°C to 70°C
Min. bending radius: 10 x Ø

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: insulating polyethylene
Conductor colours: as per table at the end of this section
Stranding element: conductors twisted in pairs, bunched pairs marked with tape in different colours or with following number, bunches stranded in layers to form the stranding element
Stranding element lapping: polyester film
Inner sheath: PVC
Armour: round galvanised steel wires
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables for telecommunications networks in strip and open-pit mines in areas where no explosion hazard exists, and underground mines, in areas without methane, and in excavation sites categorised as class “A” coal dust explosion hazard. The cables can be installed in shafts and excavation sites with an inclination angle up to 90

Sample cable marking: YTKGXFoyn 16 x 2 x 0,8mm – 16-pair cable, nominal conductor diameter: 0,8 mm


mining applications


telecom cable


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

shaft cable

Cat. no.	Pairs x conductor dia. [n x 2 x mm]	Calculated OD [mm]	Calculated cable weight [kg/km]
GT0200	5x2x0,8	15,6	538
GT0201	10x2x0,8	19,0	793
GT0202	16x2x0,8	22,1	1070
GT0203	24x2x0,8	24,5	1287
GT0205	33x2x0,8	27,5	1550
GT0206	56x2x0,8	32,0	2084
GT0207	60x2x0,8	32,4	2151
GT0204	100x2x0,8	41,5	3237
GT0208	120x2x0,8	44,8	3707
GT0209	200x2x0,8	54,1	5281

YnHTKGX Screened mining telecommunicationcable

RoHS 2002/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining telecommunication cable with PE insulated cooper conductors, individually screened, PVC sheath with increased flame propagation resistance
Conductor pair loop resistance at 20°C:
for 0,6 mm – max. 133,2 Ω/km
for 0,8 mm – max. 73,6 Ω/km
for 1,2 mm – max. 32,6 Ω/km
Insulation resistance: min. 1500 MΩxkm
Capacitance: max. 55 nF/km
Inductivity: max. 0,8 nF/km
Test voltage: 2000 V AC or 2800 V DC
Operating temperature: -5°C to 70°C
Min. bending radius: 10 x Ø

Construction:

Power conductors: cooper, solid class 1acc. PN-EN 60228
Protective and ground conductor: tin-plated cooper, solid class 1 acc. PN- EN 60228
Insulation: insulating polyethylene
Conductor colours:
power conductors: red and blue protective conductor: yellow-green **Conductor screen:** braid of cooper wires with earthing conductor 0,8 mm
Screened pair sheath: PVC
Stranding element: screened pairs stranded around the protective conductor
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables for use in strip, open-pit and underground mines, out of areas with the risk of explosion, and in areas with class “a”, “b” or “c” methane explosion hazard, in excavations categorised as class “A” or “B” coal dust explosion hazard.

Sample cable marking:
4 x 2 x 0,8 mm + 1,0 mm^2 - 4-pair cable, power conductor diameter: 0,8 mm, protective conductor cross section: 1,0 mm^2


mining applications


telecom cable


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

for potentially explosive areas

Cat. no.	Pairs x conductor dia. [n x 2 x mm]	Calculated OD [mm]	Calculated cable weight [kg/km]
GT0400	2 x 2 x 0,6 +1	17,0	227
GT0401	4 x 2 x 0,6 +1	19,3	292
GT0402	5 x 2 x 0,6 +1	21,0	338
GT0403	6 x 2 x 0,6 +1	22,7	380
GT0404	8 x 2 x 0,6 +1	24,4	442
GT0405	10 x 2 x 0,6 +1	28,4	530
GT0406	12 x 2 x 0,6 +1	29,3	585
GT0407	16 x 2 x 0,6 +1	32,6	721
GT0408	20 x 2 x 0,6 +1	36,3	864
GT0409	24 x 2 x 0,6 +1	40,5	1023
GT0410	33 x 2 x 0,6 +1	44,8	1292
GT0411	36 x 2 x 0,6 +1	46,6	1388
GT0412	2 x 2 x 0,8 +1	17,8	250
GT0413	4 x 2 x 0,8 +1	20,1	336
GT0414	5 x 2 x 0,8 +1	21,9	385
GT0415	6 x 2 x 0,8 +1	23,7	435
GT0416	8 x 2 x 0,8 +1	25,5	512
GT0417	10 x 2 x 0,8 +1	29,8	623
GT0418	12 x 2 x 0,8 +1	30,8	694
GT0419	16 x 2 x 0,8 +1	34,3	863
GT0420	20 x 2 x 0,8 +1	37,8	1040
GT0421	24 x 2 x 0,8 +1	42,7	1234
GT0422	33 x 2 x 0,8 +1	47,2	1573
GT0423	36 x 2 x 0,8 +1	49,2	1695

YnHTKGX Screened mining telecommunicationcable

Cat. no.	Pairs x conductor dia. [n x 2 x mm]	Calculated OD [mm]	Calculated cable weight [kg/km]
GT0424	2 x 2 x 1,2 +1	18,5	296
GT0425	4 x 2 x 1,2 +1	20,4	433
GT0426	5 x 2 x 1,2 +1	22,7	504
GT0427	6 x 2 x 1,2 +1	25,7	575
GT0428	8 x 2 x 1,2 +1	27,7	693
GT0429	10 x 2 x 1,2 +1	32,7	863
GT0430	12 x 2 x 1,2 +1	33,8	974
GT0431	16 x 2 x 1,2 +1	37,7	1230
GT0432	20 x 2 x 1,2 +1	42,0	1498
GT0433	24 x 2 x 1,2 +1	47,1	1783
GT0434	33 x 2 x 1,2 +1	52,1	2315
GT0435	36 x 2 x 1,2 +1	54,2	2500

YnTKGMFLY

Mining telecommunication cable with cooper and steel conductors

RoHS 2002/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining telecommunication cable with multi-stranded cooper and steel conductors, PVC insulated and sheathed, increased flame propagation resistance
Insulation resistance: min. 10 MΩxkm
Capacitance: max. 75 nF/km
Inductivity: max. 0,22 nF/km
Test voltage (1 min.):
2000 V AC or 2800 V DC
Operating temperature: -30°C to 70°C
Min. bending radius: 10 x Ø

Construction:

Conductors: multi-stranded cooper and steel
Insulation: PVC
Conductor colours:
1 x four: natural, blue, natural, yellow
5 pairs:
1st pair: natural, blue
2nd pair: natural, yellow
3rd pair: natural, green
4th pair: natural, black
5th pair: natural, red
Stranding element lapping: polyester film
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables for telecommunications networks in strip and open-pit mines, in areas where no explosion hazard exists, and underground mines, in areas without methane and in excavations categorised as class “A” coal dust explosion hazard.

Sample cable marking:
YnTKGMFLY 5 x 2 x 0,5mm^2 – 5-pair cable, nominal power conductor cross section: 0,5 mm^2


mining applications


telecom cable


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Cat. no.	Pairs x conductor dia. [n x 2 x mm]	Calculated OD [mm]	Calculated cable weight [kg/km]
GT0302	1x4x0,5	8,3	80
GT0303	5x2x0,5	14,6	220

8GTL3Gkon-G 300/500V

Screened telecommunication cables for strip mines

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

EMAG

Technical data:

Mining telecommunication cable with cooper, multi-stranded conductors, insulated with thermoplastic EPR based elastomers, common screen, outer sheath of thermoplastic polyolefin with increased flame propagation resistance, voltage rating 300/500 V

Resistance of each conductor insulation per 1 km of cable:
min. 200 MΩ

Effective capacitance of each pair per 1 km of cable: max. 65 nF/km

Capacitance asymmetry between adjoining bunches of pairs:
max. 1,5 L pF
(L – cable length [m]).

Attenuation loss at 800 Hz:
max. 1 dB/km

Operating temperature: -30°C to 70 °C

Relative air humidity: up to 100%

Installation temperature: -5°C to 50 °C

Minimum bending radius: 6 x Ø

Construction:

Conductors: cooper, tin-plated, multi-stranded class 6 acc. PN- EN 60228

Insulation: EPR base thermoplastic elastomers strength parameters: mechanical strength min. 12,5 MPa, elongation: min. 300%
hardness: 70 Shore A

Conductor marking: as per table

Stranding element: pairs stranded in layers with a load bearing line, wrapped in estrofol tape

Inner sheath: thermoplastic elastomer, natural colour; strength parameters: mechanical strength min. 5 MPa, elongation min. 250 %

Common screen: tin-plated cooper wire braid on an outer sheath with covering capacity min. 65 %

Outer sheath: special mix of thermoplastic polyolefins with mechanical strength min. 12,5 MPa and elongation min. 300 % and tearing resistance min. 300 N/cm^2, ensuring cable resistance to:
- UV radiation
- ozone
- oil and petrol
- reduced flammability (oxygen index 32%)

Sheath colour: black

Application:

Cable for communication, signalling and control of mining machinery in strip, open-pit mines and sand pits.

Installation and operating instructions:

Tensile stress – do not exceed 15 N/mm^2 static tensile stress for each conductor during installation and use.

Cable installation – in machines rotating sometimes in both directions by 360, the distance between fixed cable fasteners should not exceed 50 times cable OD; in machines rotating frequently in both directions during normal operation by 360, the distance between fixed cable fasteners should not exceed 100 times cable OD.

The minimum bending radius of the cables should not exceed 6 x Ø.


mining applications


telecom cable


high flexibility


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Cat. no.	Pairs and conductor cross section	Obliczeniowa średnica zewnętrzna kabla	Calculated cable OD	Calculated cooper no.	Maximum resitance often plated coopar conductor at 20°C
	[n x mm^2]	[mm]	[kg/km]	[kg/km]	[Ω/km]
T0500	2 x 2 x 1,0	13,6	82	218	20,0
GT0501	5 x 2 x 1,0	16,2	160	338	
GT0502	10 x 2 x 1,0	20,3	278	525	
GT0503	20 x 2 x 1,0	25,9	507	849	

BITNER Cable Factory reserves the right to modify the specifications without prior notification.
Note: At client request, we will manufacture cables of different cross sections and number of conductors than specified in the table.

BITNER CABLE FACTORY

8GTL3Gkon-G 300/500V

Screened telecommunication cables for strip mines

Telecommunication cable conductor colours
8GTL3Gkon-G 300/500V

Conductor pair number	Colours in pairs	
	conductor a	conductor b
1 2 3 4 5	white	blue orange green brown grey
6 7 8 9 10	red	blue orange green brown grey
11 12 13 14 15	black	blue orange green brown grey
26 17 18 19 20	yellow	blue orange green brown grey

YnWGDek 75 Coaxial mining cable

RoHS 2002/95/WE

ISO 9001:2008

Technical data:

Coaxial mining cable with solid cooper conductor and tin-plated wire braid, PVC sheath with increased resistance to flame propagation
Operating temperature: -30°C to 70 °C
Installation temperature: -30°C to 50 °C
Wave impedance: 75 ± 3Ω.
Attenuation loss: as per table
Min. bending radius: 6 x Ø

Construction:

Conductors: cooper, solid, conductor diameter 0,6 mm or 0,8 mm
Insulation: PE polyethylene
Screen: polyester film coated with aluminium on one side and tin-plated cooper wire braid
Outer sheath: special, non-flammable PVC, preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: grey

Application:

Cables for telecommunications systems in strip and open-pit mines, in areas where no explosion hazard exists.

Sample cable marking: YnWGDek 75 - 0,8/4,8 – coaxial YnWGDek cable, attenuation loss: 75 Ω, conductor diameter: 0,8 mm, insulation diameter 4,8 mm


mining applications


telecom cable


PN-EN60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Cat. no.	Conductor diameter [mm]	Insulation diameter [mm]	Calculated OD [mm]	Calculated cable weight [kg/km]
GT0314	0,6	3,7	6,0	46
GT0304	0,8	4,8	7,3	61

Frequency	Attenuation loss	
	YnWGDek 75 - 0,6/3,7	YnWGDek 75 - 0,8/4,8
[MHz]	[dB/100m]	[dB/100m]
50	7,1	6,1
100	10,5	8,0
200	15,8	11,5
300	19,2	14,3
400	22,3	16,7
500	25,6	18,8
600	28,9	20,7
800	33,5	24,5
1200	39,5	29,0

BITNER CABLE FACTORY

Telecommunication cable conductor colours YnTKGX, YnTKGXFtZnyn, YnTKGXFoyn

Bunch type	Pair	Pair insulation colour	
		a	b
5-pair odd	1	white	blue
	2	white	orange
	3	white	green
	4	white	brown
	5	white	grey
5-pair odd	6	red	blue
	7	red	orange
	8	red	green
	9	red	brown
	10	red	grey
10-pair	1	white	blue
	2	white	orange
	3	white	green
	4	white	brown
	5	white	grey
	6	red	blue
	7	red	orange
	8	red	green
	9	red	brown
	10	red	grey

Pairs in cable	Tape colour in bunches
5	any or without
10	any or without
16	red, blue, yellow
24	red, blue, yellow brown, white
25	red, blue, yellow brown, white
33	red, blue, yellow brown, white, green
56	red, blue, yellow brown, white, green
60	red, blue, yellow brown, white, green
100	red, blue, yellow brown, white, green, black orange, purple, grey
120	red, blue, yellow brown, white, green, black orange, purple, grey red-blue, white-blue, black-blue
200	red, blue, yellow brown, white, green, black orange


START
STOP
ACC

CHAPTER VII

SHOT-FIRING CABLES

SDY Shot-firing mining cable

RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
OT Nr 32/09

Technical data:

Shot-firing cable with solid PVC insulated cooper conductor
Test voltage: 2 kV, 5 min. 50 Hz
Operating temperature: - 15°C to 65°C

Construction:

Conductor: cooper, solid, conductor, diameter: 0,6 mm or 0,75 mm
Insulation: special PVC, oxygen index > 29
Insulation colour: red

Application:

Shot-firing cable for shooting works, for connecting electric detonator system with shooting line in all mines, in which shooting is performed, also in methane-areas of all hazard classes, according to mining regulations.
NOTE: If a coil of the SDY cable is protected with film (for transport and storage), remove the film before first use in places without the presence of electric detonators.


mining applications


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Cat. no.	Conductor diameter [mm]	Calculated OD [mm]	Calculated cable weight [kg/km]
G62604	1x0,6	1,8	6
G62600	1x0,75	2,0	8


KOPALNIA DOŚWIADCZALNA „BARBARA"

OPINIA

TECHNICZNA Nr 32/09

dotycząca sprzętu strzałowego

1. Przedmiot: Przewód strzałowy typu SDY 1 x 0,6 mm i SDY 1 x 0,75 mm (z żyłą miedzianą)

2. Producent: Zakłady Kablowe BITNER Celina BITNER ul. Fredlinga 3/3 30-009 Kraków Polska

3. Miejsce produkcji: Zakłady Kablowe BITNER Zakład Produkcyjny 32-353 Trzyciąż 165 k/Krakowa Polska

Nr zlecenia, kontraktu: 277/05/09 z dnia 18.05.2009 r

4. Formalna podstawa do wydania opinii:

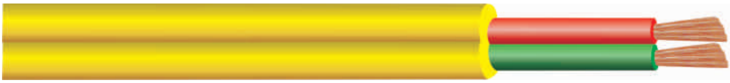
1. Rozporządzenie Ministra Gospodarki, Pracy i Polityki Społecznej z dnia 1.04.2009 r. w sprawie przechowywania i używania środków strzałowych i sprzętu strzałowego w zakładach górniczych (Dz. U. Nr 72, poz. 655).

2. Upoważnienie rzeczoznawcy do spraw ruchu zakładu górniczego Nr 164/2009 z dnia 27.01.2009 r. (L.dz.GG-780/0004/09/01170/UK) wydane przez Prezesa Wyższego Urzędu Górniczego dla Zakładu Bezpieczeństwa Górniczych Środków Strzałowych Głównego Instytutu Górnictwa – Kopalni Doświadczalnej „BARBARA" w Mikołowie.

The SDY 1 x 0,6 mm and SDY 1 x 0,75 mm shot-firing cables were examined in the "Barbara" Testing Mine and certified for use in mines based on Technical Evaluation no. 32/09 issued by the Central Mining Institute

BITNER CABLE FACTORY

PSY Shot-firing mining cable



RoHS 2002/95/WE
LVD 2006/95/WE
ISO 9001:2008
OT Nr 33/09

Technical data:

Shot-firing cable with PVC insulated conductors
Test voltage: 3 kV, 5 min. 50 Hz
Operating temperature: - 15°C to 70°C

Construction:

Conductor: cooper, multi-stranded class 5 acc. PN-EN 60228
Insulation: special PVC.
Conductor marking: red, green
Outer sheath: special, non-flammable PVC, preventing flame propagation (acc. PN- EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: yellow

Application:

Cable used for shooting as a fixed or portable shooting line in all mines, in which shooting is performed, also in methane-areas of all hazard classes, according to mining regulations.
NOTE: If a coil of the PSY cable is protected with film (for transport and storage), remove the film before first use in places without the presence of electric detonators

mining applications | PN-EN 60332-1 | IEC 60332-3 PN-EN 60332-3 | non-flammable sheath | high flexibility

Cat. no.	Conductors/ cross section [n x mm²]	Maximum cable outer dimensions [mm x mm]	Calculated cable weight [kg/km]
G62605	2x1,5	9,5x6,5	78

KOPALNIA DOŚWIADCZALNA „BARBARA"

OPINIA TECHNICZNA Nr 33/09

dotycząca sprzętu strzałowego

1. Przedmiot: Przewód strzałowy typu PSY 2 x 1,5 mm² – 0,6 / 1 kV (dwużyłowy, z żyłami miedzianymi)
2. Producent: Zakłady Kablowe BITNER, Celina BITNER, ul. Friedleina 3/3, 30-009 Kraków, Polska
3. Miejsce produkcji: Zakłady Kablowe BITNER, Zakład Produkcyjny, 32-353 Trzyciąż 156 k/Krakowa, Polska

Nr zlecenia, kontraktu: 277/05/09 z dnia 18.05.2009 r.

4. Formalna podstawa do wydania opinii:
   1. Rozporządzenie Ministra Gospodarki, Pracy i Polityki Społecznej z dnia 1.04.2003 r. w sprawie przechowywania i używania środków strzałowych i sprzętu strzałowego w zakładach górniczych (Dz. U. Nr 72, poz. 655)
   2. Upoważnienie rzeczoznawcy do spraw ruchu zakładu górniczego Nr 154/2009 z dnia 27.01.2009 r. (L.dz. GG-780/0004/09/01170/JK) wydane przez Prezesa Wyższego Urzędu Górniczego dla Zakładu Bezpieczeństwa Górniczych Środków Strzałowych Głównego Instytutu Górnictwa – Kopalni Doświadczalnej „BARBARA" w Mikołowie

The PSY 2 x 1,5 mm² shot-firing cables were examined in the “Barbara” Testing Mine and certified for use in mines based on Technical Evaluation no. 33/09 issued by the Central Mining Institute.

BITNER CABLE FACTORY

YDYp

Shot-firing mining cable

RoHS 2002/95/WE

LVD 2006/95/WE

ISO 9001:2008

OT Nr 34/09

Technical data:

Shot-firing cable with solid PVC insulated and sheathed cooper conductor
Test voltage: 3 kV, 5 min. 50 Hz
Operating temperature: - 15°C to 65°C

Construction:

Conductors: cooper, solid class 1 acc. PN-EN 60228
Insulation: special PVC
Conductor marking:
2 x 2,5mm^2: blue and black
2 x 6mm^2: green and red
Outer sheath: special, non-flammable PVC preventing flame propagation (acc. PN-EN 60332-1 tested on a single cable and PN-EN 60332-3-24, IEC 60332-3 tested on category C bunched cables), oxygen index > 29
Sheath colour: red

Application:

Cable used for shooting as a fixed or portable shooting line in all mines, in which shooting is performed, also in methane-areas of all hazard classes, according to mining regulations.
NOTE: If a coil of the YDYp cable is protected with film (for transport and storage), remove the film before first use in places without the presence of electric detonators.


mining applications


PN-EN 60332-1


IEC 60332-3
PN-EN 60332-3

non-flammable sheath

Cat. no.	Conductors/ cross section [n x mm^2]	Maximum cable outer dimensions [mm x mm]	Calculated cable weight [kg/km]
G62601	2x2,5	6,7 x 10,4	102
G62602	2x6	7,9 x 12,8	186

KOPALNIA DOŚWIADCZALNA „BARBARA"

GŁÓWNY INSTYTUT GÓRNICTWA

OPINIA

TECHNICZNA Nr 34/09

dotycząca sprzętu strzałowego

1. Przedmiot: Przewód strzałowy typu YDYp 2 x 2,5 mm^2 oraz YDYp 2 x 6,0 mm^2 (dwużyłowy, z żyłami nieodizolowanymi)

2. Producent: Zakłady Kablowe BITNER
Celina BITNER
ul. Fredlerra 3/3
30-059 Kraków
Polska

3. Miejsce produkcji: Zakłady Kablowe BITNER
Zakład Produkcyjny
32-353 Trzyciąż 169 k/Krakowa
Polska

Nr zlecenia, kontraktu: 277/05/09 z dnia 18.05.2009 r

4. Formalna podstawa do wydania opinii:
1. Rozporządzenie Ministra Gospodarki, Pracy i Polityki Społecznej z dnia 1.04.2003 r. w sprawie przechowywania i używania środków strzałowych i sprzętu strzałowego w zakładach górniczych (Dz. U. Nr 72, poz. 655).
2. Upoważnienie rzeczoznawcy do spraw ruchu zakładu górniczego Nr 164/2009 z dnia 27.01.2009 r. (L.dz.GG-780/09/409/5117/0JK) wydane przez Prezesa Wyższego Urzędu Górniczego dla Zakładu Bezpieczeństwa Górniczych Środków Strzałowych Głównego Instytutu Górnictwa – Kopalni Doświadczalnej „BARBARA" w Mikołowie.

The YDYp 2 x 2,5 mm^2 and YDYp 2 x 6 mm^2 shot-firing cables were examined in the "Barbara" Testing Mine and certified for use in mines based on Technical Evaluation no. 34/09 issued by the Central Mining Institute.

BITNER CABLE FACTORY

Notes

Notes

BITNER Cable Factory – Discover our products

Power

BITNER cables ensure long-lasting performance and reliable power supply to industrial equipment. Heavy gauge cables allow supply of electricity to power equipment. Flexible cables are used to supply portable and mobile devices. MV cables are used in the generation of power and other industries.

Mining

Mining cables are designed for use in severe conditions. High temperature, humidity and frequent mechanical exposure require cables and conductors to have greater strength and the best quality. BITNER cables ensure power supply and signal transmission in strip and Frasch process mines and in the most demanding of underground conditions.

Automation and control

A broad range of control cables and conductors is used mainly in industrial automation systems. High quality BITNER cables ensure easy installation and trouble-free performance. Modern solutions have been added to the offer of control cables – hybrid cables and a variety of cables with increased chemical and mechanical resistance.

Fire protection

Since the very beginning, BITNER Cable Factory has dealt with the production of cables for fire safety systems. Such cables are used to safeguard people and property in public premises (cinemas, shopping centres, stadiums) and in industrial facilities. The cables offered by BITNER Cable Factory conform to PN-EN 50200 (PH90) and German DIN 4102-12 (E90) standards.

Telecommunications

Our cables provide connectivity both in the fields of telecommunications and data transmission.

The range of BITNER cables will satisfy even the most demanding customers. Whilst conversing on the phone or viewing your e-mails, you are probably using our cables.

Audio

High-fidelity in sound reproduction requires not only superior quality stereo equipment, but also very good cables. In our range we not only have cables for household use, but we also have cables designed for facilities requiring the best quality sound systems, concert halls, recording studios, etc.

We manufacture cables for concert sound systems and for on-stage lighting control.

BITNER
CABLE FACTORY

BITNER
CABLE FACTORY

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