

Mining Cables

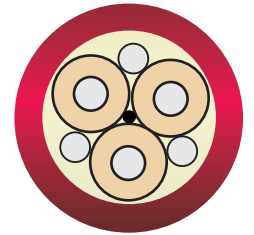
Medium Voltage

Table of contents

BiTmining® NTSCGEWOEU-W .../3	2
BiTmining® NTSCGEWOEU-W .../3E.....	5
BiTmining® (N)TSKCGECWOEU-CH.....	
BiTmining® (N)TSKCGECWOEU-FN.....	
BiTmining® (N)TSCGEWOEU-F.....	
BiTmining® (N)TSCGEWOEU-R.....	
BiTmining® (N)TSCGEWOEU-SR.....	
BiTmining® (N)TSCGEWOEU-TR.....	

BiTmining[®] NTSCGEWOEU-W .../3

Medium voltage, flexible power supply cable for use in water



Technical data:

Operating temperature:

Fixed systems: -40°C to 90°C

Flexible operation: -25°C to 80°C

Maximum permissible water temperature: 40°C

Maximum permissible operating temperature of the conductor: 90°C

Maximum conductors operating temperature in short-circuit: 250°C

Tensile load: 15 N/mm²

Torsional stresses: +/- 100°/m

Min. bending radius: according to DIN VDE 0298, Part 3

Operating voltage: U₀/U = 3,6/6 kV to 18/30 kV

Test voltage: 11 kV to 43 kV

Standard: according to DIN VDE 0250, p.813

Construction:

Conductor: finely stranded class 5 (EN 60228, DIN VDE 0295) tinned, electrolytic copper

Insulation: EPR compound with improved electrical and mechanical characteristics (DIN VDE 0207, Part 20)

Arrangement of protective-earth conductor: protective-earth conductor split into 3 in the outer interstices

Electrical field control: Inner and outer semiconductive layer of semiconductive rubber

Core colours: Natural colouring with black semiconductive rubber with printed white digits 1-3

Core arrangement: Three main conductors laid-up with protective-earth conductor split into 3 in the outer interstices

Wrapping: semiconductive, reinforced, swellable, binding and separating tape

Inner sheath: EPR compound type GM1b, waterproof (acc. to DIN VDE 0201, Part 21)

Outer sheath: 5GM5 compound with improved mechanical characteristics (acc. to DIN VDE 0207, Part 21), colour: red

Rated voltage U ₀ /U [kV]	3,6/6	6/10	8,7/15	12/20	14/25	18/30
Maximum permissible operating voltage in AC systems U ₀ /U [kV]	4,2/7,2	6,9/12	10,4/18	13,9/24	17,3/30	20,8/36
Maximum permissible operating voltage in DC systems U ₀ /U [kV]	5,4/10,8	9/18	13,5/27	18/36	22,5/45	27/54
AC test voltage [kV]	11	17	24	29	36	43
Current-carrying capacity	According to DIN VDE 0298, Part 4					

Chemical parameters:

Resistance to oil: EN 60811-2-1, IEC 60811-2-1

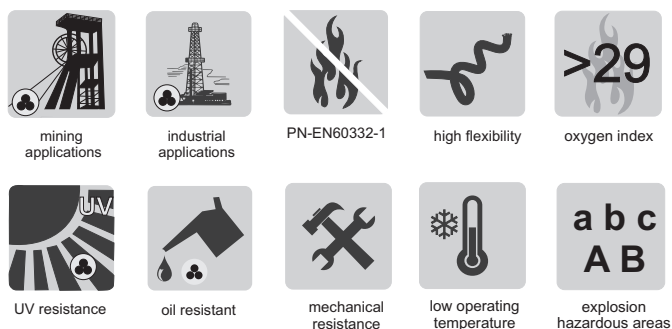
Behaviour in case of fire: VDE 0482 Part 332-1-2, EN 60332-1-2, IEC 60332-1-2

Water compatibility: HD 22.16 (VDE 0282 Part 16)

Weather resistance: Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture

Application:

Power supply cable for use strip and open-pit mining facilities designed for operation in water and exposed to high mechanical stresses, e.g. for connection to dredgers, floating docks, submersible pumps, etc. Cables are suitable to work in sewage, salt and brackish water.



BiTmining[®] NTSCGEWOEU-W .../3

Medium voltage, flexible power supply cable for use in water

BiTmining[®] NTSCGEWOEU-W .../3 3,6/6kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	45,8	0,795	0,36	0,34	131	3,0	3050	1125
3x35+3x25/3	48,0	0,565	0,34	0,38	162	4,3	3400	1575
3x50+3x25/3	52,4	0,393	0,32	0,44	202	6,1	4150	2250
3x70+3x35/3	57,1	0,277	0,31	0,48	250	8,5	5300	3150
3x95+3x50/3	61,8	0,210	0,29	0,54	301	11,6	6550	4275
3x120+3x70/3	64,3	0,164	0,28	0,59	352	14,6	7450	5400
3x150+3x70/3	70,1	0,132	0,28	0,64	404	18,3	8750	6750
3x185+3x95/3	75,8	0,108	0,27	0,69	461	22,6	10450	8325

BiTmining[®] NTSCGEWOEU-W .../3 6/10kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	48,2	0,795	0,37	0,31	131	3,0	3250	1125
3x35+3x25/3	50,3	0,565	0,35	0,35	162	4,3	3650	1575
3x50+3x25/3	54,5	0,393	0,33	0,39	202	6,1	4400	2250
3x70+3x35/3	59,4	0,277	0,31	0,43	250	8,5	5570	3150
3x95+3x50/3	63,1	0,210	0,30	0,49	301	11,6	6720	4275
3x120+3x70/3	66,5	0,164	0,29	0,53	352	14,6	7750	5400
3x150+3x50/3	72,4	0,132	0,28	0,58	404	18,3	9100	6750
3x150+3x70/3	72,4	0,132	0,28	0,58	404	18,3	9100	6750
3x185+3x50/3	77,9	0,108	0,28	0,62	461	22,6	10700	8325
3x185+3x95/3	77,9	0,108	0,28	0,62	461	22,6	10800	8325

BiTmining[®] NTSCGEWOEU-W .../3 8,7/15kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	53,6	0,795	0,39	0,25	139	3,0	3860	1125
3x35+3x25/3	55,8	0,565	0,37	0,28	172	4,3	4260	1575
3x50+3x25/3	60,3	0,393	0,35	0,31	215	6,1	5100	2250
3x70+3x35/3	64,9	0,277	0,33	0,34	265	8,5	6300	3150
3x95+3x50/3	69,6	0,210	0,32	0,39	319	11,6	7650	4275
3x120+3x70/3	72,3	0,164	0,31	0,42	371	14,6	8600	5400
3x150+3x70/3	77,8	0,132	0,30	0,46	428	18,3	10100	6750
3x185+3x95/3	83,6	0,108	0,29	0,48	488	22,6	11800	8325

BiTmining[®] NTSCGEWOEU-W .../3

Medium voltage, flexible power supply cable for use in water

BiTmining[®] NTSCGEWOEU-W .../3 12/20kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	58,0	0,795	0,41	0,22	139	3,0	4360	1125
3x35+3x25/3	61,1	0,565	0,39	0,24	172	4,3	4900	1575
3x50+3x25/3	65,4	0,393	0,37	0,27	215	6,1	5770	2250
3x70+3x35/3	70,2	0,277	0,35	0,30	265	8,5	7050	3150
3x95+3x50/3	73,9	0,210	0,33	0,33	319	11,6	8300	4275
3x120+3x70/3	77,3	0,164	0,32	0,36	371	14,6	9370	5400
3x150+3x70/3	83,2	0,132	0,31	0,39	428	18,3	10900	6750
3x185+3x95/3	88,6	0,108	0,30	0,41	488	22,6	12650	8325

BiTmining[®] NTSCGEWOEU-W .../3 14/25kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	65,4	0,795	0,43	0,19	139	3,0	5350	1125
3x35+3x25/3	67,5	0,565	0,41	0,21	172	4,3	5780	1575
3x50+3x25/3	72,0	0,393	0,39	0,23	215	6,1	6750	2250
3x70+3x35/3	76,6	0,277	0,37	0,25	265	8,5	8050	3150
3x95+3x50/3	81,3	0,210	0,35	0,28	319	11,6	9500	4275
3x120+3x70/3	83,9	0,164	0,34	0,30	371	14,6	10500	5400
3x150+3x70/3	89,6	0,132	0,33	0,33	428	18,3	12050	6750
3x185+3x95/3	95,4	0,108	0,32	0,35	488	22,6	14000	8325

BiTmining[®] NTSCGEWOEU-W .../3 18/30kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	71,5	0,795	0,45	0,17	139	3,0	6220	1125
3x35+3x25/3	73,6	0,565	0,43	0,19	172	4,3	6690	1575
3x50+3x25/3	77,9	0,393	0,41	0,21	215	6,1	7660	2250
3x70+3x35/3	82,8	0,277	0,39	0,23	265	8,5	9100	3150
3x95+3x50/3	86,5	0,210	0,37	0,25	319	11,6	10400	4275
3x120+3x70/3	89,8	0,164	0,35	0,27	371	14,6	11600	5400
3x150+3x70/3	95,8	0,132	0,34	0,30	428	18,3	13250	6750
3x185+3x95/3	101,3	0,108	0,33	0,31	488	22,6	15200	8325

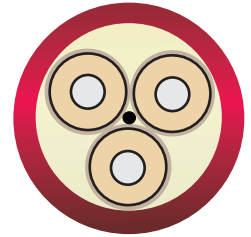
Cable Factory BITNER reserve the right to modify specifications without prior notification.

*Cable outer diameter may differ from the one shown in table

Note: On customer's request other cross sections or number of cores can be produced

BiTmining[®] NTSCGEWOEU-W .../3E

Medium voltage, flexible power supply cable for use in water



Technical data:

Operating temperature:

Fixed systems: -40°C to 90°C

Flexible operation: -25°C to 80°C

Maximum permissible water temperature: 40°C

Maximum permissible operating temperature of the conductor: 90°C

Maximum conductors operating temperature in short-circuit: 250°C

Tensile load: 15 N/mm²

Torsional stresses: +/- 25°/m

Min. bending radius: according to DIN VDE 0298, Part 3

Operating voltage: U₀/U = 3,6/6 kV to 18/30 kV

Test voltage: 11 kV to 43 kV

Standard: according to DIN VDE 0250, p.813

Construction:

Conductor: finely stranded class 5 (EN 60228, DIN VDE 0295) tinned, electrolytic copper

Insulation: EPR compound with improved electrical and mechanical characteristics (DIN VDE 0207, Part 20)

Arrangement of protective-earth conductor: Individual concentric protective-earth conductors distributed over the insulation of three power cores

Electrical field control: Inner and outer layers of semiconductive rubber and individual concentric protective-earth conductor

Core colours: Natural colouring with black semiconductive rubber with printed white digits 1-3

Core arrangement: Three main conductors and protective-earth conductor split into 3 elements distributed concentrically over the insulation of three power conductors laid-up together

Wrapping: semiconductive, reinforced, swellable, binding and separating tape

Inner sheath: EPR compound type GM1b, waterproof (acc. to DIN VDE 0201, Part 21)

Outer sheath: 5GM5 compound with improved mechanical characteristics (acc. to DIN VDE 0207, Part 21), colour: red

Rated voltage U ₀ /U [kV]		3,6/6	6/10	8,7/15	12/20	14/25	18/30
Maximum permissible operating voltage in AC systems U ₀ /U [kV]		4,2/7,2	6,9/12	10,4/18	13,9/24	17,3/30	20,8/36
Maximum permissible operating voltage in DC systems U ₀ /U [kV]		5,4/10,8	9/18	13,5/27	18/36	22,5/45	27/54
AC test voltage [kV]		11	17	24	29	36	43
Current-carrying capacity		According to DIN VDE 0298, Part 4					

Chemical parameters:

Resistance to oil: EN 60811-2-1, IEC 60811-2-1

Behaviour in case of fire: VDE 0482 Part 332-1-2, EN 60332-1-2, IEC 60332-1-2

Water compatibility: HD 22.16 (VDE 0282 Part 16)

Weather resistance: Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture

Application:

Power supply cable for use strip and open-pit mining facilities designed for operation in water and exposed to high mechanical stresses, e.g. for connection to dredgers, floating docks, submersible pumps, etc. Cables are suitable to work in sewage, salt and brackish water.



mining applications



industrial applications



PN-EN60332-1



high flexibility



oxygen index



UV resistance



oil resistant



mechanical resistance



low operating temperature



explosion hazardous areas

BiTmining[®] NTSCGEWOEU-W .../3E

Medium voltage, flexible power supply cable for use in water

BiTmining[®] NTSCGEWOEU-W .../3E 3,6/6kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x16/3E	48,9	0,795	0,36	0,34	131	3,0	3250	1125
3x35+3x16/3E	51,0	0,565	0,34	0,38	162	4,3	3630	1575
3x50+3x25/3E	56,2	0,393	0,32	0,44	202	6,1	4620	2250
3x70+3x35/3E	60,1	0,277	0,31	0,48	250	8,5	5660	3150
3x95+3x50/3E	66,0	0,210	0,29	0,54	301	11,6	7070	4275
3x120+3x70/3E	67,0	0,164	0,28	0,59	352	14,6	8270	5400
3x150+3x70/3E	74,0	0,132	0,28	0,64	404	18,3	9500	6750
3x185+3x95/3E	80,5	0,108	0,27	0,69	461	22,6	11580	8325

BiTmining[®] NTSCGEWOEU-W .../3E 6/10kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x16/3E	50,1	0,795	0,37	0,31	131	3,0	3380	1125
3x35+3x16/3E	54,1	0,565	0,35	0,34	162	4,3	3980	1575
3x50+3x25/3E	57,5	0,393	0,33	0,38	202	6,1	4770	2250
3x70+3x35/3E	61,4	0,277	0,31	0,43	250	8,5	5830	3150
3x95+3x50/3E	67,3	0,210	0,30	0,48	301	11,6	7250	4275
3x120+3x70/3E	70,3	0,164	0,29	0,54	352	14,6	8460	5400
3x150+3x70/3E	77,1	0,132	0,28	0,58	404	18,3	10000	6750
3x185+3x95/3E	81,8	0,108	0,28	0,61	461	22,6	11800	8325

BiTmining[®] NTSCGEWOEU-W .../3E 8,7/15kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x16/3E	56,7	0,795	0,39	0,25	139	3,0	4130	1125
3x35+3x16/3E	58,8	0,565	0,37	0,28	172	4,3	4550	1575
3x50+3x25/3E	62,3	0,393	0,35	0,31	215	6,1	5355	2250
3x70+3x35/3E	67,9	0,277	0,33	0,34	265	8,5	6730	3150
3x95+3x50/3E	72,0	0,210	0,32	0,39	319	11,6	7950	4275
3x120+3x70/3E	76,9	0,164	0,31	0,42	371	14,6	9470	5400
3x150+3x70/3E	81,8	0,132	0,30	0,46	428	18,3	10780	6750
3x185+3x95/3E	88,3	0,108	0,29	0,48	488	22,6	12980	8325

BiTmining[®] NTSCGEWOEU-W .../3E

Medium voltage, flexible power supply cable for use in water

BiTmining[®] NTSCGEWOEU-W .../3E 12/20kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x16/3E	61,0	0,795	0,41	0,22	139	3,0	4650	1125
3x35+3x16/3E	65,0	0,565	0,39	0,24	172	4,3	5340	1575
3x50+3x25/3E	68,4	0,393	0,37	0,27	215	6,1	6200	2250
3x70+3x35/3E	72,3	0,277	0,35	0,30	265	8,5	7340	3150
3x95+3x50/3E	78,2	0,210	0,33	0,33	319	11,6	8900	4275
3x120+3x70/3E	81,2	0,164	0,32	0,36	371	14,6	10200	5400
3x150+3x70/3E	86,1	0,132	0,31	0,39	428	18,3	11550	6750
3x185+3x95/3E	92,6	0,108	0,30	0,41	488	22,6	13800	8325

BiTmining[®] NTSCGEWOEU-W .../3E 14/25kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x16/3E	68,3	0,795	0,43	0,19	139	3,0	5650	1125
3x35+3x16/3E	70,5	0,565	0,41	0,21	172	4,3	6120	1575
3x50+3x25/3E	73,9	0,393	0,39	0,23	215	6,1	7050	2250
3x70+3x35/3E	79,6	0,277	0,37	0,25	265	8,5	8520	3150
3x95+3x50/3E	83,7	0,210	0,35	0,28	319	11,6	9850	4275
3x120+3x70/3E	88,6	0,164	0,34	0,30	371	14,6	11500	5400
3x150+3x70/3E	93,5	0,132	0,33	0,33	428	18,3	12950	6750
3x185+3x95/3E	98,2	0,108	0,32	0,35	488	22,6	14900	8325

BiTmining[®] NTSCGEWOEU-W .../3E 18/30kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x16/3E	73,5	0,795	0,45	0,17	139	3,0	6420	1125
3x35+3x16/3E	77,5	0,565	0,43	0,19	172	4,3	7220	1575
3x50+3x25/3E	80,9	0,393	0,41	0,21	215	6,1	8170	2250
3x70+3x35/3E	84,8	0,277	0,39	0,23	265	8,5	9400	3150
3x95+3x50/3E	90,7	0,210	0,37	0,25	319	11,6	11120	4275
3x120+3x70/3E	93,7	0,164	0,35	0,27	371	14,6	12460	5400
3x150+3x70/3E	100,5	0,132	0,34	0,30	428	18,3	14350	6750
3x185+3x95/3E	105,2	0,108	0,33	0,31	488	22,6	16400	8325

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

*Cable outer diameter may differ from the one shown in table

Note: On customer's request other cross sections or number of cores can be produced

BiTmining[®] (N)TSKCGECWOEU-CH

Medium voltage, flexible power supply coal cutter cable for chain operation



Technical data:

Fixed systems: -40°C to 90°C
Flexible operation: -25 °C to 80 °C
Maximum permissible operating temperature of the conductor: 90°C
Maximum conductors operating temperature in short-circuit: 250°C
Tensile load: 15 N/mm²
Min. bending radius: acc. to DIN VDE 0298, Part 3, or 2.3x D with tensile load limited to 5 N/mm²
Minimum distance with S-type directional changes: 20 x D
Operating voltage: U₀/U= 3,6/6 kV
Test voltage: 11 kV
Standard: based on DIN VDE 0250, p.813

Construction:

Conductor: finely stranded class 6 (EN 60228, DIN VDE 0295) tinned, electrolytic copper
Control/protective conductor: spirally applied concentric CuSn wires forming control conductors around support element, EPR insulation and spirally applied concentric CuSn wires to form protective conductor
Insulation: EPR compound with improved electrical and mechanical characteristics (DIN VDE 0207, Part 20)
Electrical field control: inner and outer layers of semiconductive rubber
Core identification: Natural colouring with black semiconductive rubber with printed white digits 1-3
Core arrangement: Three power conductors laid-up with double concentric control/protective conductor elements in the outer interstices, with optimised lay length
Inner sheath: GM1b (acc. to DIN VDE 0207, Part 21)
Signal/monitoring conductor: spirally applied FeZn and CuSn wires in a vulcanized bond between inner and outer sheath.
Outer sheath: 5GM5 compound with improved mechanical characteristics (acc. to DIN VDE 0207, Part 21), colour: red

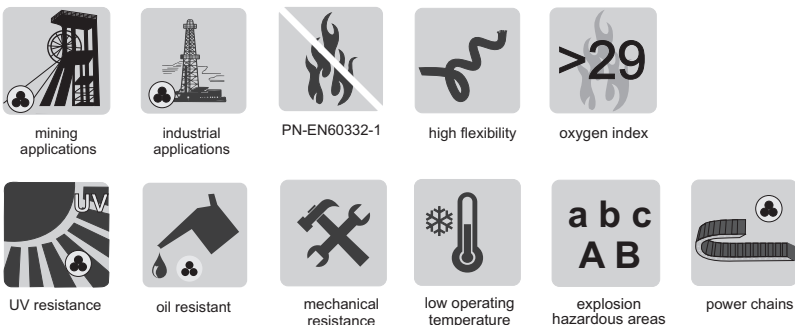
Rated voltage U ₀ /U [kV]	3,6/6
Maximum permissible operating voltage in AC systems U ₀ /U [kV]	4,2/7,2
Maximum permissible operating voltage in DC systems U ₀ /U [kV]	5,4/10,8
AC test voltage [kV]	11
Current-carrying capacity	According to DIN VDE 0298, Part 4

Chemical parameters:

Resistance to oil: EN 60811-2-1, IEC 60811-2-1
 Behaviour in case of fire: VDE 0482 Part 332-1-2, EN 60332-1-2, IEC 60332-1-2
 Weather resistance: Unrestricted use indoors, outdoors, resistance to ozone, UV and moisture

Application:

Flexible power supply cable for use in underground mining facilities for mobile machines like coal cutters etc. Designed for use in cable chains trailed behind the machines. Chains have protective function and absorb the tensile forces occurring during operation.



BiTmining[®] (N)TSKCGECWOEU-CH

Medium voltage, flexible power supply coal cutter cable for chain operation

BiTmining[®] (N)TSKCGECWOEU-CH 3,6/6kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x35+3x(1,5ST KON+25/3KON) + 6ÜL KON)	56,6	0,554	0,31	0,38	162	4,3	4710	1575
3x50+3x(1,5ST KON+25/3KON) + 6ÜL KON)	60,9	0,386	0,30	0,43	202	6,1	6060	2250
3x70+3x(1,5ST KON+35/3KON) + 6ÜL KON)	64,0	0,272	0,29	0,49	250	8,5	6640	3150
3x95+3x(1,5ST KON+50/3KON) + 6ÜL KON)	67,0	0,206	0,28	0,55	301	11,6	8160	4275
3x120+3x(1,5ST KON+70/3KON) + 6ÜL KON)	71,3	0,164	0,27	0,60	352	14,6	9700	5400

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

*Cable outer diameter may differ from the one shown in table

Note: On customer's request other cross sections or number of cores can be produced

BiTmining[®] (N)TSKCGECWOEU-FN

Medium voltage, flexible power supply cable for underground festoon systems



Technical data:

Operating temperature:
 Fixed systems: -40°C to 90°C
 Flexible operation: -25°C to 80 °C
 Maximum permissible operating temperature of the conductor: 90°C
 Maximum conductors operating temperature in short-circuit: 250°C
Tensile load: 15 N/mm²
Min. bending radius: acc. to DIN VDE 0298, Part 3
Operating voltage: U₀/U= 3,6/6 kV
Test voltage: 11 kV
Standard: based on DIN VDE 0250 p.813

Construction:

Conductor: finely stranded class 5 (EN 60228, DIN VDE 0295) tinned, electrolytic copper
Control/protective conductor: spirally applied concentric CuSn wires forming control conductors around support element, EPR insulation and spirally applied concentric CuSn wires to form protective conductor
Insulation: EPR compound with improved electrical and mechanical characteristics (DIN VDE 0207, Part 20)
Electrical field control: inner and outer layers of semiconductive rubber
Core identification: Natural colouring with black semiconductive rubber with printed white digits 1-3
Core arrangement: Three power conductors laid-up with double concentric control/protective conductor elements in the outer interstices, with optimised lay length
Inner sheath: GM1b (acc. to DIN VDE 0207, Part 21)
Signal/monitoring conductor: spirally applied FeZn and CuSn wires in a vulcanized bond between inner and outer sheath.
Outer sheath: 5GM5 compound with improved mechanical characteristics (acc. to DIN VDE 0207, Part 21), colour: red

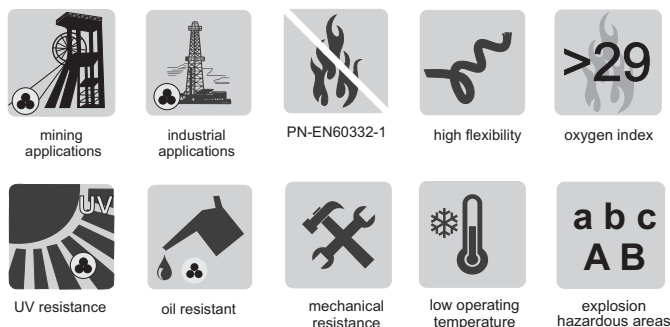
Rated voltage U ₀ /U [kV]	3,6/6
Maximum permissible operating voltage in AC systems U ₀ /U [kV]	4,2/7,2
Maximum permissible operating voltage in DC systems U ₀ /U [kV]	5,4/10,8
AC test voltage [kV]	11
Current-carrying capacity	According to DIN VDE 0298, Part 4

Chemical parameters:

Resistance to oil: EN 60811-2-1, IEC 60811-2-1
 Behaviour in case of fire: VDE 0482 Part 332-1-2, EN 60332-1-2, IEC 60332-1-2
 Weather resistance: Unrestricted use indoors, outdoors, resistance to ozone, UV and moisture

Application:

Flexible power supply cable for use in underground mining facilities especially for festoon systems



BiTmining[®] (N)TSKCGECWOEU-FN

Medium voltage, flexible power supply cable for underground festoon systems

BiTmining[®] (N)TSKCGECWOEU-FN 3,6/6kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x35+3x(1,5ST KON+3x25/3KON) + 6ÜL KON	50,1	0,554	0,30	0,28	162	4,3	4120	1575
3x50+3x(1,5ST KON+3x25/3KON) + 6ÜL KON	54,5	0,386	0,29	0,33	202	6,1	5000	2250
3x70+3x(1,5ST KON+3x35/3KON) + 6ÜL KON	58,5	0,272	0,28	0,37	250	8,5	6060	3150
3x95+3x(1,5ST KON+3x50/3KON) + 6ÜL KON	65,0	0,206	0,27	0,42	301	11,6	7310	4275
3x120+3x(1,5ST KON+3x70/3KON) + 6ÜL KON	68,2	0,164	0,26	0,46	352	14,6	8670	5400

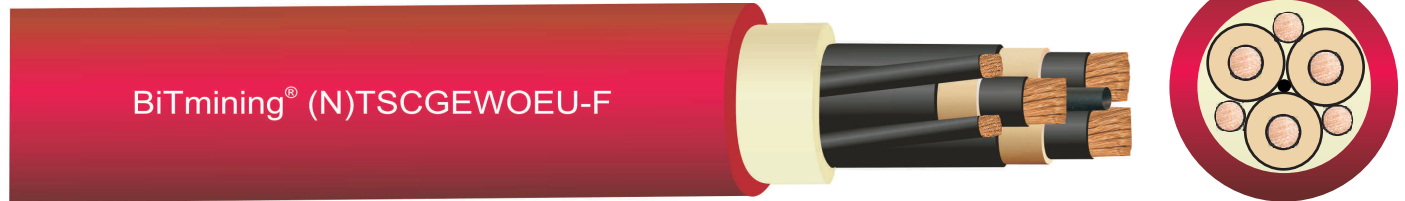
Cable Factory BITNER reserve the right to modify specifications without prior notification.

*Cable outer diameter may differ from the one shown in table

Note: On customer's request other cross sections or number of cores can be produced

BiTmining[®] (N)TSCGEWUEU-F

Medium voltage, flexible power supply cable for fixed installations



Technical data:

Operating temperature:

Fixed systems: -40°C to 90°C

Flexible operation: -25 °C to 80 °C

Maximum permissible water temperature: 40°C

Maximum permissible operating temperature of the conductor: 90°C

Maximum conductors operating temperature in short-circuit: 250°C

Tensile load: 15 N/mm²

Torsional stresses: +/-100°/m

Min. bending radius: acc. to DIN VDE 0298, Part 3

Travel speed on rewinding: up to 100m/min

Operating voltage: U₀/U= 3,6/6 kV to 18/30 kV

Test voltage: 11 kV to 43 kV

Standard: based on DIN VDE 0250 p.813

Construction:

Conductor: finely stranded class 5 (EN 60228, DIN VDE 0295) not tinned, electrolytic copper

Insulation: EPR compound with improved electrical and mechanical characteristics (DIN VDE 0207, Part 20)

Electrical field control: inner and outer layers of semiconductive rubber

Core identification: Natural colouring with black semiconductive rubber and printed white digits 1 to 3

Core arrangement: Three main conductors laid-up with protective-earth conductor split into 3 in the outer interstices

Inner sheath: special EPR compound (acc. to DIN VDE 0207, Part 21)

Outer sheath: 5GM5 compound with improved mechanical characteristics (acc. to DIN VDE 0207, Part 21), waterproof, colour: red

Rated voltage U ₀ /U [kV]	3,6/6	6/10	8,7/15	12/20	14/25	18/30
Maximum permissible operating voltage in AC systems U ₀ /U [kV]	4,2/7,2	6,9/12	10,4/18	13,9/24	17,3/30	20,8/36
Maximum permissible operating voltage in DC systems U ₀ /U [kV]	5,4/10,8	9/18	13,5/27	18/36	22,5/45	27/54
AC test voltage [kV]	11	17	24	29	36	43
Current-carrying capacity	According to DIN VDE 0298, Part 4					

Application:

Flexible power supply cable for fixed installations in strip and open-pit mining facilities, alongside belt conveyors also for continuous slight movements (free overhang, slight twisting). Can also be used as connection cable between upper and lower part of excavator, stacker/reclaimer. It is suitable also for constant operation in water as power supply cable to submersible pumps.

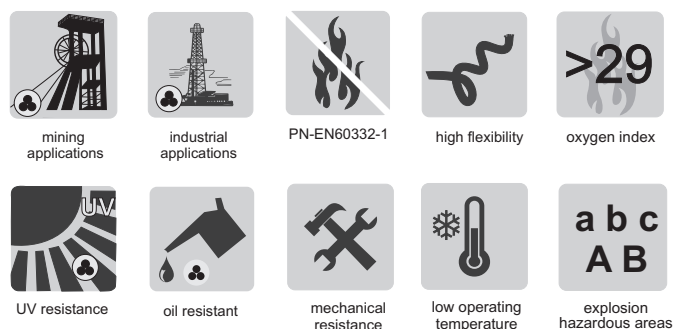
Chemical parameters:

Resistance to oil: EN 60811-2-1, IEC 60811-2-1

Behaviour in case of fire: VDE 0482 Part 332-1-2, EN 60332-1-2, IEC 60332-1-2

Water compatibility: HD 22.16 (VDE 0282 Part 16)

Weather resistance: Unrestricted use indoors, outdoors, resistance to ozone, UV and moisture



BiTmining[®] (N)TSCGEWOEU-F

Medium voltage, flexible power supply cable for fixed installations

BiTmining[®] (N)TSCGEWOEU-F 3,6/6kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	39,2	0,780	0,33	0,45	131	3,58	2475	1125
3x25+3x50/3	43,6	0,780	0,36	0,45	131	3,58	3225	1125
3x35+3x25/3	42,7	0,554	0,31	0,50	162	5,01	2950	1575
3x35+3x50/3	45,3	0,554	0,33	0,50	162	5,01	3540	1575
3x50+3x25/3	46,2	0,386	0,30	0,58	202	7,15	3565	2250
3x50+3x50/3	46,6	0,386	0,30	0,58	202	7,15	3960	2250
3x70+3x35/3	50,0	0,272	0,29	0,64	250	10,01	4560	3150
3x70+3x50/3	50,0	0,272	0,29	0,64	250	10,01	4780	3150
3x95+3x50/3	54,5	0,206	0,27	0,73	301	13,6	5750	4275
3x120+3x70/3	57,1	0,161	0,26	0,80	352	17,16	6600	5400
3x150+3x70/3	64,8	0,129	0,26	0,88	404	21,45	8140	6750
3x185+3x95/3	69,6	0,106	0,25	0,94	462	26,46	9640	8325
3x240+3x120/3	74,5	0,080	0,24	1,07	540	34,32	11750	10800
3x300+3x150/3	81,2	0,004	0,24	1,18	620	42,90	14440	13500

BiTmining[®] (N)TSCGEWOEU-F 6/10kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	41,9	0,780	0,34	0,40	131	3,58	2716	1125
3x25+3x50/3	43,6	0,780	0,36	0,40	131	3,58	3220	1125
3x35+3x25/3	44,0	0,554	0,32	0,45	162	5,01	3065	1575
3x35+3x50/3	46,2	0,554	0,34	0,45	162	5,01	3625	1575
3x50+3x25/3	47,5	0,386	0,30	0,51	202	7,15	3690	2250
3x50+3x50/3	47,5	0,386	0,30	0,51	202	7,15	4040	2250
3x70+3x35/3	53,1	0,272	0,29	0,57	250	10,01	4915	3150
3x70+3x50/3	53,1	0,272	0,29	0,57	250	10,01	5140	3150
3x95+3x50/3	55,8	0,206	0,28	0,65	301	13,60	5900	4275
3x120+3x70/3	58,4	0,161	0,27	0,71	352	17,16	6760	5400
3x150+3x70/3	66,1	0,129	0,26	0,78	404	21,45	8320	6750
3x185+3x95/3	70,8	0,106	0,26	0,83	462	26,46	9830	8325
3x240+3x120/3	77,6	0,080	0,25	0,95	540	34,32	12276	10800
3x300+3x150/3	82,5	0,004	0,24	1,04	620	42,90	14666	13500

BiTmining[®] (N)TSCGEWOEU-F 8,7/15kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	45,3	0,780	0,36	0,32	139	3,58	30,40	1125
3x25+3x50/3	46,2	0,780	0,38	0,32	139	3,58	3470	1125
3x35+3x25/3	47,5	0,554	0,34	0,36	172	5,01	3400	1575
3x35+3x50/3	47,5	0,554	0,34	0,36	172	5,01	3755	1575
3x50+3x25/3	50,9	0,386	0,32	0,41	215	7,15	4060	2250
3x50+3x50/3	50,9	0,386	0,32	0,41	215	7,15	4400	2250
3x70+3x35/3	56,6	0,272	0,31	0,45	265	10,01	5320	3150
3x70+3x50/3	56,6	0,272	0,31	0,45	265	10,01	5545	3150
3x95+3x50/3	59,2	0,206	0,29	0,51	319	13,60	6325	4275
3x120+3x70/3	63,1	0,161	0,28	0,56	371	17,16	7380	5400
3x150+3x70/3	69,6	0,129	0,28	0,60	428	21,45	8820	6750
3x185+3x95/3	74,3	0,106	0,27	0,65	488	26,46	10365	8325
3x240+3x120/3	81,0	0,080	0,26	0,73	574	34,32	12860	10800
3x300+3x150/3	86,0	0,004	0,25	0,80	665	42,90	15290	13500

BiTmining[®] (N)TSCGEWOU-F

Medium voltage, flexible power supply cable for fixed installations

BiTmining[®] (N)TSCGEWOU-F 12/20kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	48,3	0,780	0,38	0,28	139	3,58	3345	1125
3x25+3x50/3	48,3	0,780	0,38	0,28	139	3,58	3690	1125
3x35+3x25/3	50,5	0,554	0,36	0,31	172	5,01	3725	1575
3x35+3x50/3	50,5	0,554	0,36	0,31	172	5,01	4075	1575
3x50+3x25/3	55,7	0,386	0,34	0,35	215	7,15	4625	2250
3x50+3x50/3	55,7	0,386	0,34	0,35	215	7,15	4975	2250
3x70+3x35/3	59,6	0,272	0,32	0,38	265	10,01	5695	3150
3x70+3x50/3	59,6	0,272	0,32	0,38	265	10,01	5920	3150
3x95+3x50/3	65,0	0,206	0,31	0,43	319	13,60	7125	4275
3x120+3x70/3	67,6	0,161	0,30	0,47	371	17,16	8040	5400
3x150+3x70/3	72,6	0,129	0,29	0,51	428	21,45	9280	6750
3x185+3x95/3	79,1	0,106	0,28	0,54	488	26,46	11180	8325
3x240+3x120/3	84,0	0,080	0,27	0,62	574	34,32	13395	10800
3x300+3x150/3	89,0	0,004	0,26	0,67	665	42,90	15850	13500

BiTmining[®] (N)TSCGEWOU-F 14/25kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	54,4	0,780	0,40	0,24	139	3,58	4030	1125
3x25+3x50/3	54,4	0,780	0,40	0,24	139	3,58	4380	1125
3x35+3x25/3	56,6	0,554	0,37	0,26	172	5,01	4440	1575
3x35+3x50/3	56,6	0,554	0,37	0,26	172	5,01	4790	1575
3x50+3x25/3	60,0	0,386	0,35	0,30	215	7,15	5160	2250
3x50+3x50/3	60,0	0,386	0,35	0,30	215	7,15	5510	2250
3x70+3x35/3	65,7	0,272	0,34	0,33	265	10,01	6535	3150
3x70+3x50/3	65,7	0,272	0,34	0,33	265	10,01	6760	3150
3x95+3x50/3	69,3	0,206	0,32	0,36	319	13,60	7750	4275
3x120+3x70/3	71,9	0,161	0,31	0,40	371	17,16	8680	5400
3x150+3x70/3	76,9	0,129	0,30	0,43	428	21,45	9970	6750
3x185+3x95/3	83,4	0,106	0,29	0,46	488	26,46	11930	8325
3x240+3x120/3	88,3	0,080	0,28	0,52	574	34,32	14185	10800
3x300+3x150/3	93,3	0,004	0,27	0,56	665	42,90	16690	13500

BiTmining[®] (N)TSCGEWOU-F 18/30kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	57,9	0,780	0,41	0,21	139	3,58	4450	1125
3x25+3x50/3	57,9	0,780	0,41	0,21	139	3,58	4800	1125
3x35+3x25/3	60,0	0,554	0,39	0,24	172	5,01	4875	1575
3x35+3x50/3	60,0	0,554	0,39	0,24	172	5,01	5220	1575
3x50+3x25/3	65,3	0,386	0,37	0,26	215	7,15	5885	2250
3x50+3x50/3	65,3	0,386	0,37	0,26	215	7,15	6230	2250
3x70+3x35/3	69,1	0,272	0,35	0,29	265	10,01	7030	3150
3x70+3x50/3	69,1	0,272	0,35	0,29	265	10,01	7260	3150
3x95+3x50/3	72,8	0,206	0,33	0,32	319	13,60	8275	4275
3x120+3x70/3	77,2	0,161	0,32	0,35	371	17,16	9545	5400
3x150+3x70/3	82,1	0,129	0,31	0,38	428	21,45	10880	6750
3x185+3x95/3	86,8	0,106	0,30	0,40	488	26,46	12555	8325
3x240+3x120/3	91,8	0,080	0,29	0,46	574	34,32	14850	10800
3x300+3x150/3	96,7	0,004	0,28	0,49	665	42,90	17390	13500

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

*Cable outer diameter may differ from the one shown in table

Note: On customer's request other cross sections or number of cores can be produced

BiTmining[®] (N)TSCGEWOEU-R

Medium voltage, flexible power supply cable for reeling applications



Technical data:

Operating temperature:

Fixed systems: -40°C to 90°C

Flexible operation: -25°C to 80°C

Maximum permissible operating temperature of the conductor: 90°C

Maximum conductors operating temperature in short-circuit: 250°C

Tensile load: 20 N/mm²

Torsional stresses: +/-100°/m

Min. bending radius: acc. to DIN VDE 0298, Part 3

Minimum distance with S-type directional changes: 20 x D

Travel speed:

- In operation: up to 60m/min

- On rewinding: up to 100m/min

Operating voltage: U₀/U= 3,6/6 kV to 18/30 kV

Test voltage: 11 kV to 43 kV

Standard: based on DIN VDE 0250 p.813

Construction:

Conductor: very finely stranded class 6 (EN 60228, DIN VDE 0295) not tinned, electrolytic copper

Insulation: EPR compound with improved electrical and mechanical characteristics (DIN VDE 0207, Part 20)

Electrical field control: inner and outer layers of semiconductive rubber

Core identification: Natural colouring with black semiconductive rubber and printed white digits 1 to 3

Core arrangement: Three main conductors laid-up with protective-earth conductor split into 3 in the outer interstices

Inner sheath: special EPR compound (acc. to DIN VDE 0207, Part 21)

Anti-torsion reinforcement: braid of polyamide threads in a vulcanized bond between inner and outer sheath being integral part of an outer sheath. Protection from transverse and longitudinal stress.

Outer sheath: 5GM5 compound with improved mechanical characteristics (acc. to DIN VDE 0207, Part 21), waterproof, colour: red

Rated voltage U ₀ /U [kV]	3,6/6	6/10	8,7/15	12/20	14/25	18/30
Maximum permissible operating voltage in AC systems U ₀ /U [kV]	4,2/7,2	6,9/12	10,4/18	13,9/24	17,3/30	20,8/36
Maximum permissible operating voltage in DC systems U ₀ /U [kV]	5,4/10,8	9/18	13,5/27	18/36	22,5/45	27/54
AC test voltage [kV]	11	17	24	29	36	43
Current-carrying capacity	According to DIN VDE 0298, Part 4					

Chemical parameters:

Resistance to oil: EN 60811-2-1, IEC 60811-2-1

Behaviour in case of fire: VDE 0482 Part 332-1-2, EN 60332-1-2, IEC 60332-1-2

Weather resistance: Unrestricted use indoors, outdoors, resistance to ozone, UV and moisture

Application:

Flexible power supply cable for use in strip and open-pit mining facilities, for high mechanical stresses, designed for connection of large material handling machines such as excavators, dumpers or mobile crushers. Main application: operation on cable reels



mining applications



industrial applications



PN-EN60332-1



high flexibility



oxygen index



UV resistance



oil resistant



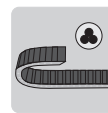
mechanical resistance



low operating temperature



explosion hazardous areas



power chains

BiTmining[®] (N)TSCGEWOEU-R

Medium voltage, flexible power supply cable for reeling applications

BiTmining[®] (N)TSCGEWOEU-R 3,6/6kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	39,2	0,780	0,31	0,44	131	3,58	2545	1500
3x25+3x50/3	43,1	0,780	0,35	0,44	131	3,58	3216	1500
3x35+3x25/3	43,3	0,554	0,30	0,50	162	5,01	3087	2100
3x35+3x50/3	45,8	0,554	0,32	0,50	162	5,01	3660	2100
3x50+3x25/3	46,8	0,386	0,28	0,58	202	7,15	3810	3000
3x50+3x50/3	48,0	0,386	0,30	0,58	202	7,15	4280	3000
3x70+3x35/3	50,5	0,272	0,27	0,65	250	10,01	4750	4200
3x70+3x50/3	50,5	0,272	0,27	0,65	250	10,01	4960	4200
3x95+3x50/3	56,2	0,206	0,26	0,74	301	13,6	6230	5700
3x120+3x70/3	58,4	0,161	0,25	0,82	352	17,16	7136	7200
3x150+3x70/3	65,5	0,129	0,25	0,90	404	21,45	8650	9000
3x185+3x95/3	69,1	0,106	0,24	0,97	462	26,46	9585	11100
3x240+3x120/3	74,1	0,080	0,24	1,10	540	34,32	11772	14400
3x300+3x150/3	80,8	0,064	0,23	1,21	620	42,90	14440	18000

BiTmining[®] (N)TSCGEWOEU-R 6/10kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	41,8	0,780	0,32	0,39	131	3,58	2765	1500
3x25+3x50/3	44,5	0,780	0,32	0,39	131	3,58	3355	1500
3x35+3x25/3	45,0	0,554	0,31	0,45	162	5,01	3250	2100
3x35+3x50/3	47,1	0,554	0,31	0,45	162	5,01	3795	2100
3x50+3x25/3	48,5	0,386	0,29	0,51	202	7,15	3985	3000
3x50+3x50/3	48,5	0,386	0,29	0,51	202	7,15	4320	3000
3x70+3x35/3	53,3	0,272	0,28	0,58	250	10,01	5055	4200
3x70+3x50/3	55,1	0,272	0,28	0,58	250	10,01	5485	4200
3x95+3x50/3	57,9	0,206	0,27	0,66	301	13,60	6430	5700
3x120+3x70/3	60,1	0,161	0,26	0,73	352	17,16	7340	7200
3x150+3x70/3	67,2	0,129	0,25	0,79	404	21,45	8890	9000
3x185+3x95/3	70,8	0,106	0,25	0,86	462	26,46	9840	11100
3x240+3x120/3	77,6	0,080	0,24	0,97	540	34,32	12360	14400
3x300+3x150/3	82,5	0,064	0,24	1,07	620	42,90	14740	18000

BiTmining[®] (N)TSCGEWOEU-R 8,7/15kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	45,2	0,780	0,34	0,31	139	3,58	3085	1500
3x25+3x50/3	46,1	0,780	0,34	0,31	139	3,58	3500	1500
3x35+3x25/3	48,4	0,554	0,33	0,36	172	5,01	3590	2100
3x35+3x50/3	48,4	0,554	0,33	0,36	172	5,01	3925	2100
3x50+3x25/3	52,0	0,386	0,31	0,41	215	7,15	4350	3000
3x50+3x50/3	52,0	0,386	0,31	0,41	215	7,15	4690	3000
3x70+3x35/3	57,1	0,272	0,30	0,45	265	10,01	5505	4200
3x70+3x50/3	57,1	0,272	0,30	0,45	265	10,01	5715	4200
3x95+3x50/3	61,4	0,206	0,28	0,51	319	13,60	6870	5700
3x120+3x70/3	64,8	0,161	0,27	0,57	371	17,16	7975	7200
3x150+3x70/3	70,6	0,129	0,27	0,62	428	21,45	9390	9000
3x185+3x95/3	74,3	0,106	0,26	0,67	488	26,46	10370	11100
3x240+3x120/3	81,0	0,080	0,25	0,75	574	34,32	12940	14400
3x300+3x150/3	86,0	0,064	0,25	0,82	665	42,90	15350	18000

BiTmining[®] (N)TSCGEWOEU-R

Medium voltage, flexible power supply cable for reeling applications

BiTmining[®] (N)TSCGEWOEU-R 12/20kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	48,2	0,780	0,36	0,27	139	3,58	3385	1500
3x25+3x50/3	48,2	0,780	0,36	0,27	139	3,58	3720	1500
3x35+3x25/3	51,4	0,554	0,34	0,31	172	5,01	3910	2100
3x35+3x50/3	51,4	0,554	0,34	0,31	172	5,01	4240	2100
3x50+3x25/3	56,8	0,386	0,32	0,35	215	7,15	4925	3000
3x50+3x50/3	56,8	0,386	0,32	0,35	215	7,15	5460	3000
3x70+3x35/3	60,5	0,272	0,31	0,39	265	10,01	5935	4200
3x70+3x50/3	60,5	0,272	0,31	0,39	265	10,01	6145	4200
3x95+3x50/3	65,4	0,206	0,30	0,44	319	13,60	7415	5700
3x120+3x70/3	69,3	0,161	0,29	0,48	371	17,16	8650	7200
3x150+3x70/3	73,6	0,129	0,28	0,52	428	21,45	9850	9000
3x185+3x95/3	79,1	0,106	0,27	0,56	488	26,46	11170	11100
3x240+3x120/3	84,0	0,080	0,26	0,63	574	34,32	13460	14400
3x300+3x150/3	89,0	0,064	0,26	0,69	665	42,90	15900	18000

BiTmining[®] (N)TSCGEWOEU-R 14/25kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	54,4	0,780	0,38	0,23	139	3,58	4030	1500
3x25+3x50/3	54,4	0,780	0,38	0,23	139	3,58	4380	1500
3x35+3x25/3	56,6	0,554	0,36	0,26	172	5,01	4440	2100
3x35+3x50/3	56,6	0,554	0,36	0,26	172	5,01	4790	2100
3x50+3x25/3	60,0	0,386	0,34	0,30	215	7,15	5160	3000
3x50+3x50/3	60,0	0,386	0,34	0,30	215	7,15	5510	3000
3x70+3x35/3	65,7	0,272	0,32	0,33	265	10,01	6535	4200
3x70+3x50/3	65,7	0,272	0,32	0,33	265	10,01	6760	4200
3x95+3x50/3	69,3	0,206	0,31	0,37	319	13,60	7750	5700
3x120+3x70/3	71,9	0,161	0,30	0,41	371	17,16	8680	7200
3x150+3x70/3	76,9	0,129	0,29	0,44	428	21,45	9970	9000
3x185+3x95/3	83,4	0,106	0,28	0,47	488	26,46	11930	11100
3x240+3x120/3	88,3	0,080	0,27	0,53	574	34,32	14185	14400
3x300+3x150/3	93,3	0,064	0,27	0,58	665	42,90	16690	18000

BiTmining[®] (N)TSCGEWOEU-R 18/30kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	57,4	0,780	0,40	0,21	139	3,58	4415	1500
3x25+3x50/3	57,4	0,780	0,40	0,21	139	3,58	4750	1500
3x35+3x25/3	60,6	0,554	0,38	0,24	172	5,01	5005	2100
3x35+3x50/3	60,6	0,554	0,38	0,24	172	5,01	5340	2100
3x50+3x25/3	64,5	0,386	0,35	0,26	215	7,15	5920	3000
3x50+3x50/3	64,5	0,386	0,35	0,26	215	7,15	6255	3000
3x70+3x35/3	69,3	0,272	0,34	0,29	265	10,01	7145	4200
3x70+3x50/3	69,3	0,272	0,34	0,29	265	10,01	7360	4200
3x95+3x50/3	73,1	0,206	0,32	0,33	319	13,60	8550	5700
3x120+3x70/3	78,5	0,161	0,31	0,36	371	17,16	10095	7200
3x150+3x70/3	82,8	0,129	0,30	0,39	428	21,45	11380	9000
3x185+3x95/3	86,8	0,106	0,29	0,42	488	26,46	12530	11100
3x240+3x120/3	91,8	0,080	0,28	0,46	574	34,32	14900	14400
3x300+3x150/3	96,7	0,064	0,27	0,51	665	42,90	17425	18000

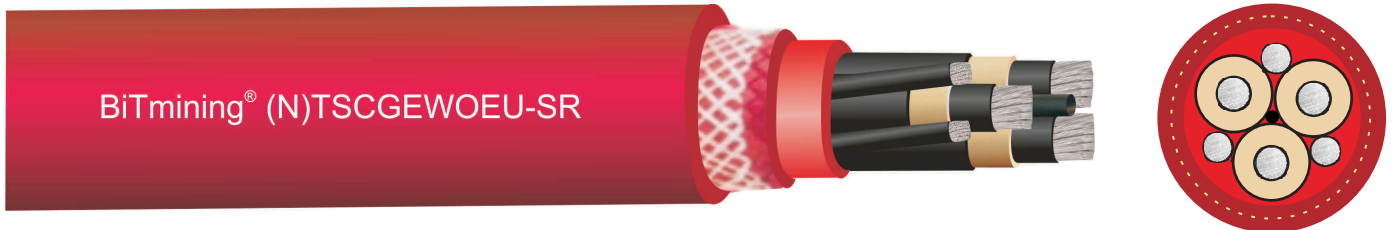
Cable Factory BITNER reserve the right to modify specifications without prior notification.

*Cable outer diameter may differ from the one shown in table

Note: On customer's request other cross sections or number of cores can be produced

BiTmining[®] (N)TSCGEWOEU-SR

Medium voltage, flexible power supply cable for high speed reeling applications



Technical data:

Operating temperature:

Fixed systems: -50°C to 90°C

Flexible operation: -35 °C to 80 °C

Maximum permissible water temperature: 40°C

Maximum permissible operating temperature of the conductor: 90°C

Maximum conductors operating temperature in short-circuit: 250°C

Tensile load: 20 N/mm²

Torsional stresses: +/-25°/m

Min. bending radius: acc. to DIN VDE 0298, Part 3

Minimum distance with S-type directional changes: 20 x D

Travel speed on gantry (reeling operation): 240m/min

Operating voltage: U₀/U= 3,6/6 kV to 18/30 kV

Test voltage: 11 kV to 43 kV

Standard: based on DIN VDE 0250 p.813

Construction:

Conductor: very finely stranded class 6 (EN 60228, DIN VDE 0295) tinned, electrolytic copper

Insulation: EPR compound with improved electrical and mechanical characteristics (DIN VDE 0207, Part 20)

Electrical field control: inner and outer layers of semiconductive rubber

Core identification: natural colouring with black semiconductive rubber and printed white digits 1 to 3

Core arrangement: three main conductors laid-up with optimised lay length, protective-earth conductor split into 3 in the outer interstices

Inner sheath: special rubber compound, better than 5GM5 (acc. to DIN VDE 0207, Part 21) acting as a water barrier, colour red

Anti-torsion reinforcement: braid of polyamide threads in a vulcanized bond between inner and double outer sheath being integral part of an outer sheath. Protection from transverse and longitudinal stress

Outer sheath: special double layer sheath made of 5GM5 compound, water-, abrasion- and tear-proof (acc. to DIN VDE 0207, Part 21), colour: red

Rated voltage U ₀ /U [kV]	3,6/6	6/10	8,7/15	12/20	14/25	18/30
Maximum permissible operating voltage in AC systems U ₀ /U [kV]	4,2/7,2	6,9/12	10,4/18	13,9/24	17,3/30	20,8/36
Maximum permissible operating voltage in DC systems U ₀ /U [kV]	5,4/10,8	9/18	13,5/27	18/36	22,5/45	27/54
AC test voltage [kV]	11	17	24	29	36	43
Current-carrying capacity	According to DIN VDE 0298, Part 4					

Chemical parameters:

Resistance to oil: EN 60811-2-1, IEC 60811-2-1

Behaviour in case of fire: VDE 0482 Part 332-1-2, EN 60332-1-2, IEC 60332-1-2

Water compatibility: HD 22.16 (VDE 0282 Part 16)

Weather resistance: Unrestricted use indoors, outdoors, resistance to ozone, UV and moisture

Application:

Flexible power supply cable for use in open-pit and underground mining facilities, a shipyards and docks for extremely high mechanical stresses during high travel speeds, multiple changes of direction into different planes, dynamic tensile loads etc. Cable designed mainly for large mobile equipment, excavators, container cranes etc.



mining applications



industrial applications



PN-EN60332-1



high flexibility



oxygen index



UV resistance



oil resistant



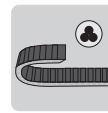
mechanical resistance



low operating temperature



explosion hazardous areas



power chains

BiTmining[®] (N)TSCGEWOU-SR

Medium voltage, flexible power supply cable for reeling applications

BiTmining[®] (N)TSCGEWOU-SR 3,6/6kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	39,4	2730	1500
3x35+3x25/3	42,7	3230	2100
3x50+3x25/3	46,0	3955	3000
3x70+3x35/3	51,3	5130	4200
3x95+3x50/3	56,4	6600	5700
3x120+3x70/3	59,8	7715	7200
3x150+3x70/3	65,3	9090	9000
3x185+3x95/3	69,3	10155	11100
3x240+3x120/3	76,3	12790	14400
3x300+3x150/3	81,4	15310	18000

BiTmining[®] (N)TSCGEWOU-SR 6/10kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	41,4	2915	1500
3x35+3x25/3	44,8	3450	2100
3x50+3x25/3	47,3	4100	3000
3x70+3x35/3	53,5	5400	4200
3x95+3x50/3	57,7	6790	5700
3x120+3x70/3	61,3	7930	7200
3x150+3x70/3	66,6	9300	9000
3x185+3x95/3	70,6	10380	11100
3x240+3x120/3	78,0	13120	14400
3x300+3x150/3	83,9	15810	18000

BiTmining[®] (N)TSCGEWOU-SR 8,7/15kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	45,0	3290	1500
3x35+3x25/3	48,2	3840	2100
3x50+3x25/3	51,4	4585	3000
3x70+3x35/3	56,9	5855	4200
3x95+3x50/3	61,2	7280	5700
3x120+3x70/3	66,0	8665	7200
3x150+3x70/3	70,0	9860	9000
3x185+3x95/3	74,1	10980	11100
3x240+3x120/3	81,4	13770	14400
3x300+3x150/3	89,2	16890	18000

BiTmining[®] (N)TSCGEWUEU-SR

Medium voltage, flexible power supply cable for reeling applications

BiTmining[®] (N)TSCGEWUEU-SR 12/20kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	48,8	3715	1500
3x35+3x25/3	52,2	3720	2100
3x50+3x25/3	55,6	5120	3000
3x70+3x35/3	60,3	6340	4200
3x95+3x50/3	65,6	7950	5700
3x120+3x70/3	68,7	9100	7200
3x150+3x70/3	73,0	10380	9000
3x185+3x95/3	78,7	11820	11100
3x240+3x120/3	84,8	14460	14400
3x300+3x150/3	91,2	17330	18000

BiTmining[®] (N)TSCGEWUEU-SR 14/25kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	54,1	4370	1500
3x35+3x25/3	57,7	5040	2100
3x50+3x25/3	59,9	5720	3000
3x70+3x35/3	65,4	7100	4200
3x95+3x50/3	70,3	8715	5700
3x120+3x70/3	73,2	9870	7200
3x150+3x70/3	78,5	11380	9000
3x185+3x95/3	82,6	12575	11100
3x240+3x120/3	90,1	15565	14400
3x300+3x150/3	95,5	18300	18000

BiTmining[®] (N)TSCGEWUEU-SR 18/30kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	57,6	4830	1500
3x35+3x25/3	61,2	5530	2100
3x50+3x25/3	63,3	6230	3000
3x70+3x35/3	69,7	7790	4200
3x95+3x50/3	73,7	9300	5700
3x120+3x70/3	77,7	10660	7200
3x150+3x70/3	82,0	12040	9000
3x185+3x95/3	86,0	13270	11100
3x240+3x120/3	93,6	16320	14400
3x300+3x150/3	99,9	19320	18000

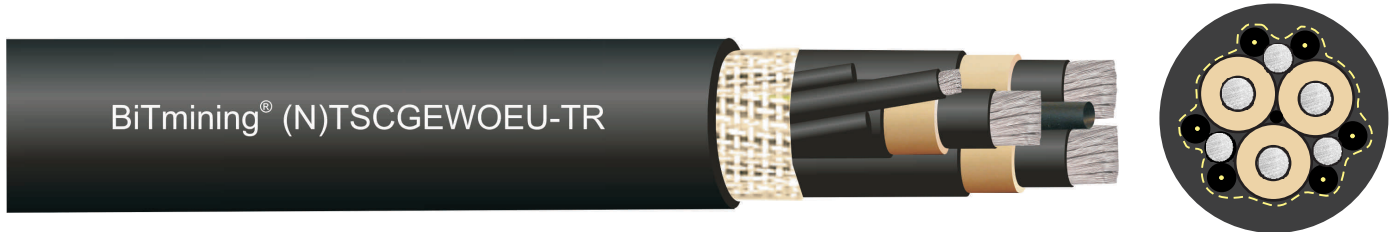
Cable Factory BITNER reserve the right to modify specifications without prior notification.

*Cable outer diameter may differ from the one shown in table

Note: On customer's request other cross sections or number of cores can be produced

BiTmining[®] (N)TSCGEWOU-TR

Medium voltage, flexible power supply trailing cable



Technical data:

Operating temperature:

Fixed systems: -40°C to 90°C

Flexible operation: -25°C to 80°C

Maximum permissible operating temperature of the conductor: 90°C

Maximum conductors operating temperature in short-circuit: 250°C

Tensile load: 15 N/mm²

Torsional stresses: +/-100°/m

Min. bending radius: acc. to DIN VDE 0298, Part 3

Operating voltage: U₀/U= 3,6/6 kV to 18/30 kV

Test voltage: 11 kV to 43 kV

Standard: based on DIN VDE 0250 p.813

Construction:

Conductor: finely stranded class 5 (EN 60228, DIN VDE 0295) tinned, electrolytic copper

Protective-earth conductor: very finely stranded class 6 (EN 60228, DIN VDE 0295) tinned, electrolytic copper

Insulation: EPR compound with improved electrical and mechanical characteristics (DIN VDE 0207, Part 20)

Electrical field control: inner and outer layers of semiconductive rubber

Core identification: Natural colouring with black semiconductive rubber and printed white digits 1 to 3

Core arrangement: Three main conductors laid-up with protective-earth conductor split into 3 in the outer interstices

Reinforcement: extremely tear-resistant reinforcing tape preventing sheath movements and protecting from transverse and longitudinal stress

Inner and outer sheath: special EPR based 5GM5 compound (acc. to DIN VDE 0207, Part 21) with special tear- and abrasion resistance characteristics, inner and outer sheath are inseparably bonded. Sheath colour black.

Rated voltage U ₀ /U [kV]	3,6/6	6/10	8,7/15	12/20	14/25	18/30
Maximum permissible operating voltage in AC systems U ₀ /U [kV]	4,2/7,2	6,9/12	10,4/18	13,9/24	17,3/30	20,8/36
Maximum permissible operating voltage in DC systems U ₀ /U [kV]	5,4/10,8	9/18	13,5/27	18/36	22,5/45	27/54
AC test voltage [kV]	11	17	24	29	36	43
Current-carrying capacity	According to DIN VDE 0298, Part 4					

Chemical parameters:

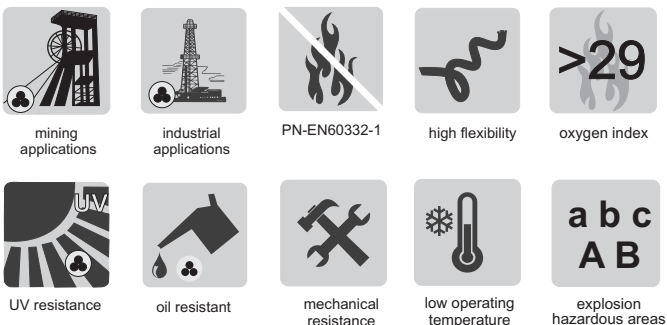
Resistance to oil: EN 60811-2-1, IEC 60811-2-1

Behaviour in case of fire: VDE 0482 Part 332-1-2, EN 60332-1-2, IEC 60332-1-2

Weather resistance: Unrestricted use indoors, outdoors, resistance to ozone, UV and moisture

Application:

Flexible cable for power supply or connections for large material handling or mining machines in open-pit mines where exposed to extremely high mechanical stresses, abrasion and tear usually during trailing operation.



BiTmining[®] (N)TSCGEWOEU-TR

Medium voltage, flexible power supply trailing cable

BiTmining[®] (N)TSCGEWOEU-TR 3,6/6kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	45,8	0,795	0,36	0,34	131	3,05	3120	1125
3x35+3x25/3	48,0	0,565	0,34	0,39	162	4,27	3500	1575
3x50+3x25/3	52,4	0,393	0,32	0,43	202	6,10	4289	2250
3x70+3x35/3	57,1	0,277	0,30	0,49	250	8,54	5450	3150
3x95+3x50/3	61,7	0,210	0,29	0,54	301	11,59	6750	4275
3x120+3x70/3	64,3	0,164	0,28	0,60	352	14,64	7650	5400
3x150+3x50/3	70,1	0,132	0,27	0,65	404	18,30	9015	6750
3x185+3x95/3	75,8	0,108	0,27	0,70	461	22,57	10755	8325

BiTmining[®] (N)TSCGEWOEU-TR 6/10kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	48,1	0,795	0,37	0,31	131	3,05	3365	1125
3x35+3x25/3	50,3	0,565	0,34	0,35	162	4,27	3750	1575
3x50+3x25/3	54,5	0,393	0,33	0,39	202	6,10	4540	2250
3x70+3x35/3	59,4	0,277	0,31	0,44	250	8,54	5745	3150
3x95+3x50/3	63,0	0,210	0,30	0,49	301	11,59	6925	4275
3x120+3x70/3	66,4	0,164	0,29	0,54	352	14,64	7960	5400
3x150+3x50/3	72,4	0,132	0,28	0,58	404	18,30	9370	6750
3x150+3x70/3	72,4	0,132	0,28	0,58	404	18,30	9380	6750
3x185+3x50/3	77,9	0,108	0,28	0,63	461	22,57	10970	8325
3x185+3x95/3	77,9	0,108	0,27	0,63	461	22,57	11120	8325

BiTmining[®] (N)TSCGEWOEU-TR 8,7/15kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	53,7	0,795	0,39	0,25	139	3,05	4000	1125
3x35+3x25/3	55,8	0,565	0,37	0,28	172	4,27	4410	1575
3x50+3x25/3	60,2	0,393	0,35	0,31	215	6,10	5270	2250
3x70+3x35/3	64,9	0,277	0,33	0,35	265	8,54	6520	3150
3x95+3x50/3	69,6	0,210	0,32	0,39	319	11,59	7900	4275
3x120+3x70/3	72,1	0,164	0,31	0,42	371	14,64	8840	5400
3x150+3x70/3	77,9	0,132	0,30	0,46	428	18,30	10300	6750
3x185+3x95/3	83,6	0,108	0,29	0,50	488	22,57	12140	8325

BiTmining[®] (N)TSCGEWOEU-TR

Medium voltage, flexible power supply trailing cable

BiTmining[®] (N)TSCGEWOEU-TR 12/20kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	58,0	0,795	0,41	0,22	139	3,05	4530	1125
3x35+3x25/3	61,1	0,565	0,39	0,25	172	4,27	5100	1575
3x50+3x25/3	65,3	0,393	0,37	0,27	215	6,10	5985	2250
3x70+3x35/3	70,2	0,277	0,35	0,30	265	8,54	7310	3150
3x95+3x50/3	73,9	0,210	0,33	0,33	319	11,59	8580	4275
3x120+3x70/3	77,2	0,164	0,32	0,36	371	14,64	9690	5400
3x150+3x70/3	83,2	0,132	0,31	0,39	428	18,30	11250	6750
3x185+3x95/3	88,5	0,108	0,30	0,42	488	22,57	13100	8325

BiTmining[®] (N)TSCGEWOEU-TR 14/25kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	65,3	0,795	0,43	0,19	139	3,05	5550	1125
3x35+3x25/3	67,5	0,565	0,41	0,21	172	4,27	6020	1575
3x50+3x25/3	71,9	0,393	0,39	0,23	215	6,10	6990	2250
3x70+3x35/3	76,6	0,277	0,37	0,25	265	8,54	8350	3150
3x95+3x50/3	81,3	0,210	0,35	0,28	319	11,59	9850	4275
3x120+3x70/3	83,8	0,164	0,34	0,30	371	14,64	10870	5400
3x150+3x70/3	89,6	0,132	0,33	0,33	428	18,30	12480	6750
3x185+3x95/3	95,3	0,108	0,32	0,35	488	22,57	14470	8325

BiTmining[®] (N)TSCGEWOEU-TR 18/30kV

Number of cores and nominal cross-section n x mm ²	Overall cable diameter* [mm]	Conductor resistance at 20 °C [Ω/km]	Inductance [mH/km]	Operating capacitance [μF/km]	Current carrying capacity at 30 °C [A]	Permissible short-circuit current (1s) [kA]	Approx. net weight [kg/km]	Maximum permissible tensile force [N]
3x25+3x25/3	71,5	0,795	0,45	0,17	139	3,05	6480	1125
3x35+3x25/3	73,7	0,565	0,43	0,19	172	4,27	6980	1575
3x50+3x25/3	77,9	0,393	0,40	0,21	215	6,10	7990	2250
3x70+3x35/3	82,8	0,277	0,38	0,23	265	8,54	9440	3150
3x95+3x50/3	86,4	0,210	0,37	0,25	319	11,59	10810	4275
3x120+3x70/3	89,8	0,164	0,35	0,27	371	14,64	12020	5400
3x150+3x70/3	95,7	0,132	0,34	0,29	428	18,30	13740	6750
3x185+3x95/3	101,3	0,108	0,33	0,31	488	22,57	15770	8325

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

*Cable outer diameter may differ from the one shown in table

Note: On customer's request other cross sections or number of cores can be produced

Notes