



Works photo: LIEBHERR

# Allweather Cables Rubber Cables Welding Cable

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# Allweather Cables, Rubber Cables, Welding Cable

HELUKABEL® supply mainly from stock light, middle and heavy rubber cables, drum cables with polyurethane or neoprene outer jacket, elevator control cables with central or external support cores, connecting cables for submersible pumps and other special cables. One of the biggest stocks of special cables in Germany makes this delivery time possible.

Our well trained sales team with longterm experience and the latest technology know how will solve your cable problems.

Because of the permanent developments and tests it is possible for HELUKABEL® to manufacture cables with the newest and proven materials.

We would like to construct and manufacture “your” cable.

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HELUKABEL BAUFLEX 4G1,5 QMM / 26076 450/750 V 001042750

CE

## Technical data

- Special PVC core/jacket insulation
- ÖVE\* approved
- EX-area
- Cold resistant up to -35°C (K35)
- **Temperature range**  
flexing -35°C to +50°C  
fixed installation -40°C to +70°C
- **Nominal voltage** U<sub>0</sub>/U 450/750 V
- **Test voltage** 2500 V
- **Breakdown voltage** min. 5000 V
- **Insulation resistance**  
min. 20 MOhm x km
- **Minimum bending radius**  
approx. 7,5x cable Ø

## Cable structure

- Plain copper conductors, fine wire stranded
- Special PVC core insulation
- Core coding to DIN VDE 0293 (flexible cables)
- Green-yellow earth core
- Cores stranded in layers with optimal lay-length
- Special PVC outer jacket, colour yellow
- PVC self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

## Advantages

- High tear and oil resistance
- Good abrasion resistance and flexibility
- Good resistance to chemicals

## Application

HELUKABEL BAUFLEX can be used in dry or damp conditions both in and outdoors installation as for medium weight to heavy duty appliances. Also suitable for lighting equipment of agricultural operations, in hazardous areas, as connection cable in hobby performances such as electric hand Sanders, lawn mowers and extension cables.

- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-no. *)
26070	2x1	7,8	19	75	17
26071	3G1	8,3	29	90	17
26072	4G1	9,3	39	115	17
26073	5G1	10,2	48	140	17
26074	2x1,5	8,7	29	95	16
26075	3G1,5	9,4	43	115	16
26076	4G1,5	10,4	58	145	16
26077	5G1,5	11,5	72	180	16
26078	7G1,5	13,7	101	240	16
26079	12G1,5	16,7	173	375	16
26080	3G2,5	11,1	72	170	14
26081	4G2,5	12,3	96	215	14
26082	5G2,5	13,4	120	260	14

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-no. *)
26083	4G4	14,1	154	348	12
26084	5G4	16,4	192	400	12
26085	4G6	16,7	230	380	10
26086	5G6	18,9	288	550	10
26087	10G6	28,4	579	1115	10
26088	4G10	22,8	384	810	8
26089	5G10	25,7	480	1000	8
26090	4C16	26,2	614	1010	6
26091	5C16	29,1	768	1350	6

### \*) Note

AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> – see page T 15.

G = with green-yellow earth core

X = without green-yellow earth core

PVC cables will be changed to lead free PVC successively.



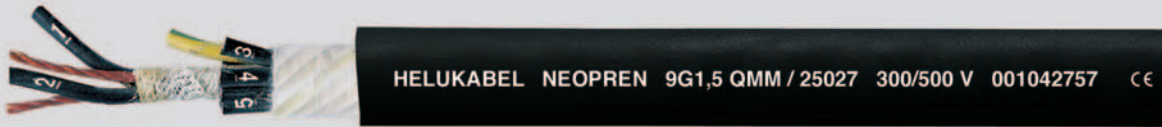
◀ BAUFLEX printed with customers name.

Please note: we can also have this cable printed with your company name or emblem.

Minimum quantity: 300 m

\* (Österreichische Versuchsanstalt der Elektrizitätswerke)

# Neoprene Control Cable flexible, colour or number coded, with support organ



## Technical data

- Special neoprene cable adapted to DIN VDE 0250 part 807 and DIN VDE 0282 part 807 and 808
- With strain bearing support strand
- **Temperature range**
  - flexing  $-25^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$
  - fixed installation  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$
- **Nominal voltage**  $U_0/U$  300/500 V
- **Test voltage** 3000 V
- **Minimum bending radius**
  - for continuous bending without forced guiding operation  $12,5 \times \text{cable } \varnothing$
  - for flexing with forced guiding operation  $20 \times \text{cable } \varnothing$

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295, cl. 6, col. 4, BS 6360 cl. 6 and IEC 60228
- Core insulation of rubber
- Support organ (temp or sisal-string etc.), and/or taping with load carrying thread as construction permits
- Cores stranded in layers with optimal lay-length
- Cores either colour coded to DIN VDE 0293 or, as of 7 cores, black with white figure imprint
- Green-yellow earth core
- Neoprene outer jacket
- Colour black
- Generally oil, fat and alkali resistant

## Application

As robust and weather resistant cable for machines, equipment and appliances, which are constantly exposed to the outdoor weather conditions (e.g. building machinery, conveyor and hoist systems, dry docks etc.). They are ideal for use as control cable in trailing cables. They are also suitable in dry, damp and wet areas for wall- and push-button panels and as power cable. The core insulation is ozone resistant and the outer jacket made of chloroprene is hardly flammable and abrasion resistant. The break resistance of the supporting element depends on the number of cores, the cross-section and the design of the conductor.

### Note

- The neoprene control cables are not suitable for a winding up and an unwinding on spring or motor cable reels.
- When using this cable the break resistance of the supporting element must be taken into consideration.
- By the assembly the cables must be installed without torsion. It should be noted that the mobility of the stranded core is not affected by using of clamps.
- The occurring pulling forces are to be carried by the support organ.

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Tensile strength of suspension strand in N	Cop. weight kg/km	Weight ca. kg/km	AWG-no. *)
25001	2x1	7,5	300	19	90	17
25002	3G1	8,5	150	29	111	17
25003	4G1	9,7	300	38	141	17
25004	5G1	11,5	300	48	170	17
25005	6G1	13,4		58	187	17
25006	7G1	13,8	2290	67	204	17
25007	9G1	15,8	2890	86	274	17
25008	12G1	17,5	6740	115	389	17
25009	16G1	19,2	570	154	432	17
25010	18G1	21,5	960	173	471	17
25011	19G1	22,0		182	565	17
25012	20G1	22,4	600	192	590	17
25013	24G1	23,6	2890	230	650	17
25074	30G1	24,6		290	785	17
25014	36G1	29,0	960	346	910	17
25015	37G1	30,5		355	936	17
25016	48G1	31,4	1440	461	1244	17
25017	50G1	32,6		480	1296	17
25018	54G1	32,9	2500	518	1399	17
25019	61G1	37,2	2290	586	1495	17
25020	2x1,5	8,5	300	29	95	16
25021	3G1,5	9,3	150	43	113	16
25022	4G1,5	10,5	570	58	150	16
25023	5G1,5	12,5	870	72	180	16
25024	6G1,5	14,3		86	245	16
25025	7G1,5	14,8	2600	101	309	16
25026	8G1,5	15,8	3460	115	333	16
25027	9G1,5	17,7	3850	130	360	16
25028	10G1,5	18,5	450	144	405	16
25029	11G1,5	20,1		158	458	16
25030	12G1,5	21,6	7710	173	516	16
25031	13G1,5	22,1		187	571	16
25032	15G1,5	22,8	680	216	590	16
25033	18G1,5	23,6	960	259	620	16
25034	19G1,5	24,1	860	274	670	16
25035	24G1,5	27,0	3850	346	817	16
25036	37G1,5	31,0		533	1220	16
25037	42G1,5	33,0	3460	605	1380	16
25038	48G1,5	34,9		691	1510	16

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Tensile strength of suspension strand in N	Cop. weight kg/km	Weight ca. kg/km	AWG-no. *)
25039	50G1,5	36,7		720	1642	16
25040	61G1,5	41,8		878	1950	16
25041	2x2,5	10,0	300	48	142	14
25042	3G2,5	10,5	300	72	172	14
25043	4G2,5	11,6	570	96	210	14
25044	5G2,5	12,9	380	120	255	14
25045	6G2,5	14,5		144	318	14
25046	7G2,5	16,2	3460	168	383	14
25075	8G2,5	16,8	3850	192	450	14
25047	9G2,5	21,5	680	216	541	14
25048	11G2,5	23,3		264	638	14
25049	12G2,5	25,4	6060	288	690	14
25050	16G2,5	24,4		383	813	14
25051	18G2,5	26,3	2290	432	891	14
25052	19G2,5	27,5		456	946	14
25053	24G2,5	30,5	6060	576	1221	14
25054	36G2,5	33,3		864	1737	14
25055	37G2,5	40,8	2500	888	1784	14
25056	48G2,5	41,9		1152	2500	14
25057	50G2,5	43,3		1200	2630	14
25058	61G2,5	49,3		1464	8100	14
25059	3G4	13,6		115	372	12
25060	4G4	15,0	600	154	407	12
25061	5G4	17,1	600	192	432	12
25062	7G4	21,5		269	495	12
25063	3G6	13,9		173	380	10
25064	4G6	15,2	1000	230	445	10
25065	5G6	18,2	900	288	569	10
25066	7G6	21,1		403	702	10
25067	3G10	18,1		288	530	8
25068	4G10	20,6	1200	384	724	8
25069	5G10	22,6	1500	480	923	8
25070	7G10	27,4		672	1288	8
25071	3G16	21,3		461	865	6
25072	4G16	25,2	1920	614	1028	6
25073	5G16	26,5	2400	768	1260	6

A further selection of sizes and dimensions is available on request.

G = with green-yellow earth core

X = without green-yellow earth core

# TK-Key Control Cable PUR-PUR halogen-free, SEV approved



HELUKABEL TK-Tasterkabel PUR-PUR 20G1 QMM / 26102 300/500 V 001042760 CE

## Technical data

- Special PUR-compound for core and jacket, adapted to DIN VDE 0250
- **Temperature range**
- flexing -30° C to +80° C
- fixed installation -40° C to +90° C (up to +100° C for short periods)
- **Nominal voltage**  $U_0/U$  300/500 V
- **Test voltage** 2000 V
- **Breakdown voltage** min. 4000 V
- **Minimum bending radius**
- approx. 10x cable  $\varnothing$
- **Radiation resistance**
- up to  $100 \times 10^6$  cJ/kg (up to 100 Mrad)

## Features

- High flexibility at low temperatures
- High abrasion resistance
- Tear resistant
- Usable for foodstuffs

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 (32x0,2 mm)
- Special PUR core insulation
- Cores black with white figure imprint
- Green-yellow earth core
- Cores torsion-free stranded in layer with optimal lay-length
- Core wrapping
- Strain bearing support braiding of synthetic fibres
- Special PUR outer jacket, halogen-free colour orange

## Application

For use as a feeder cable for control elements for all crane types, feeder cables for control boards and for key control elements.

This cable type is very flexible and **performs well under torsional stress.**

## Resistant to

- Oils and fats
- Non-alcoholic fuels and kerosene
- Atmospheric influences
- UV-radiation
- Oxygen and ozone
- Microbes and rotting
- Sea and waste water
- Vibrations

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Cop. weight kg / km	Weight ca. kg / km	Breaking strain ca. kp	AWG-no. *)
26100	8G1	13	77	200	200	17
26101	14G1	15	134	290	250	17
26102	20G1	18	192	400	300	17
26103	26G1	20	252	540	300	17

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Cop. weight kg / km	Weight ca. kg / km	Breaking strain ca. kp	AWG-no. *)
26104	33G1	22	326	660	400	17
26105	42G1	25	403	820	400	17
26106	48G1	26	480	990	400	17
26107	54G1	28	538	1120	500	17

G = with green-yellow earth core



For the connection to the robot sewer system due to inspection purpose and also for the repairing of damaged spots in sewer-net, we deliver this special cable. This cable controls and observes the multiple functions such as robot drive sewer monitoring, supply of air pressure and other function.

Works photo: Fa. Streicher

Further dimensions available on request.

# HELUKABEL LIFT-TRAGO-30

# HELUKABEL LIFT-TRAGO-60

Lift hoist control cable  
pendal length 30 m or 60 m



## Technical data

- Lift hoist control cables with strain bearing element to IEC 60227-6 edition 2001-06 and adapted to DIN VDE 0281 part 13
- **Temperature range**
  - flexing - 5°C to +50°C
  - fixed installation -40°C to +70°C
- **Max. conductor temperature**
  - under load + 70°C
  - circuit conditions +150°C
- **Nominal voltage**  $U_0/U$  300/500 V
- **Test voltage** 3000 V
- **Breakdown voltage** min. 6000 V
- **Minimum bending radius** approx. 20x cable  $\varnothing$
- **Insulation resistance** min. 20 MOhm x km
- **Radiation resistance** up to  $80 \times 10^6$  cJ/kg (up to 80 Mrad)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation, T12 to DIN VDE 0281 part 1
- Black cores with continuous white numbering according to DIN VDE 0293
- Green-yellow earth core in the outer layer
- Cores stranded with optimal lay-length according to the number of cores in one or two layers, over a central suspension strand of textile.
  - LIFT-TRAGO-30 - Fleece wrapping
  - LIFT-TRAGO-60 - Support braiding of textile suspension strands
- Outer sheath of special PVC, TM2 to DIN VDE 0281 part 1, colour black (RAL 9005)
- Extensively oil resistant
- Chemical Resistance - see table Technical Informations
- PVC self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

## Application

These cables are used as control or feeder cables in lifts and hoists.

- 30 m pendal length - LIFT-TRAGO-30
- 60 m pendal length - LIFT-TRAGO-60

Suspension height for medium mechanical stresses in dry and moist rooms. The PVC-outer sheath is oil resistant according to DIN VDE 0281 part 1.

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

### LIFT-TRAGO-30

Part No.	Core no. x cross-sec mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Cop. weight kg / km	Weight ca. kg / km	Support core	Pendal length ca. m	AWG-no.¹)
25259	7G1	11,5	67	170	textile	30	17
25260	12G1	15,7	115	325	textile	30	17
25261	18G1	16,1	173	390	textile	30	17
25262	24G1	19,2	230	530	textile	30	17

### LIFT-TRAGO-60

Part No.	Core no. x cross-sec mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Cop. weight kg / km	Weight ca. kg / km	Support core	Pendal length ca. m	AWG-no.¹)
25263	7G1	12,3	67	185	textile	60	17
25264	12G1	16,2	115	335	textile	60	17
25265	18G1	16,7	173	400	textile	60	17
25266	24G1	19,8	230	540	textile	60	17
25267	30G1	22,5	288	690	textile	60	17
25268	36G1	28,2	346	930	steel wire	60	17

#### ¹) Note

AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> - see page T 15.

PVC cables will be changed to lead free PVC successively.

G = with green-yellow earth core  
PVC cables will be changed to lead free PVC successively.  
Cable for pendal length 60 m and above available on request.



## Technical data

- Lift hoist control cables with strain bearing element
- Special PVC-compound for core and jacket, adapted to DIN VDE 0250
- **Temperature range**  
flexing -15°C to +40°C  
fixed installation -40°C to +70°C
- **Max. conductor temperature**  
under load + 70°C  
circuit conditions +150°C
- **Nominal voltage**  $U_0/U$  300/500 V
- **Test voltage** 3000 V
- **Breakdown voltage** min. 6000 V
- **Free suspension height** max. 50 m
- **Minimum bending radius**  
for type Trago:  
without stress 12,5 x cable  $\varnothing$   
with stress 20 x cable  $\varnothing$   
for type Lift 2S: 10 x cable  $\varnothing$

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 6, BS 6360 cl. 6 and IEC 60228 cl. 6
- Special PVC core insulation, Y13 to DIN VDE 0207 part 4
- Core coding to DIN VDE 0293
- Green-yellow earth core
- Special hemp support braid
  - for Trago type with central support core of hemp
  - for Lift-2S type with 2 outer steel support wires
- Cores stranded in layers with optimal lay-length
- Multi-layer wrapping functioning as a support braid
- Special PVC outer jacket YM2 to DIN VDE 0207 part 5 colour black (RAL 9005)
- PVC self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

## Application

These cables are used as control or feeder cables in lifts and hoists. The special attention given to both production and material quality for these cables has made them ideal even for use under extreme conditions.

HELUKABEL-Lift-2S has also proven itself to be ideally suited for installation in conveyor systems and manual control units.

The external steel support wires can be dismantled without damaging the cable insulation.

- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers.

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

### HELUKABEL® - Trago with central support

Part No.	Core no. x cross-sec mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Cop. weight kg / km	Weight ca. kg / km	Support core	Pendal length ca. m	AWG-no. *)
25080	7G0,75	15,4	50	290	hemp	250	18
25081	12G0,75	19,2	86	360	hemp	220	18
25082	18G0,75	21,0	130	455	hemp	110	18
25083	24G0,75	23,0	173	535	hemp	90	18
25084	7G1	14,9	67	222	hemp	80	17
25085	12G1	20,0	115	415	hemp	80	17
25086	18G1	21,4	173	450	hemp	70	17
25087	20G1	21,6	192	490	hemp	70	17
25088	24G1	23,2	230	605	hemp	60	17
25089	36G1	29,0	346	950	hemp	90	17
25090	28G1+2x0,5C*	26,0	293	760	hemp	90	17
25101	7G1+17x0,75	21,5	190	595	hemp	90	17

\* C = 2 cores 0,5 mm<sup>2</sup> with copper braiding

### HELUKABEL® - Lift-2S

as above but with 2 external support cores

25091	12G1	14,9/27,0	115,2	446	-	-	17
25092	18G1	17,1/32,1	172,8	528	-	-	17
25093	25G1	21,0/36,0	240,0	660	-	-	17
25094	30G1	21,9/39,1	288,0	760	-	-	17
25095	8G1,5	14,9/27,3	115,0	425	-	-	16
25096	12G1,5	16,5/31,5	172,8	505	-	-	16
25097	15G1,5	18,6/33,4	230,0	575	-	-	16
25098	18G1,5	19,3/35,1	259,0	640	-	-	16
25099	20G1,5	21,0/36,0	288,0	715	-	-	16
25100	24G1,5	22,6/37,6	346,0	820	-	-	16

Other dimensions and special constructions available on request.

G = with green-yellow earth core

#### \*) Note

AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> – see page T 15.

Power station installation in Korboda near Leipzig. Staircase and hoisting tower, approx. height 150m. The lifts are installed with a special cable, produced by HELUKABEL®.



Works photo: A Zeppenfeld

# TROMM-PUR PUR trailing and control cable, halogen-free



HELUKABEL TROMM-PUR 12G1 QMM / 26036 300/500 V 001042788 CE

## Technical data

- Special PUR insulation and jacket
- Adapted to DIN VDE 0250
- Strain bearing support strand
- **Temperature range**  
-40°C to +80°C  
(up to +100°C for short periods)
- **Nominal voltage**  
up to 1 mm<sup>2</sup> U<sub>0</sub>/U 300/500 V
- **Test voltage**  
up to 1 mm<sup>2</sup> = 2000 V
- **Breakdown voltage**  
up to 1 mm<sup>2</sup> = 4000 V
- **Nominal voltage**  
as of 1,5 mm<sup>2</sup> U<sub>0</sub>/U 450/750 V
- **Test voltage**  
as of 1,5 mm<sup>2</sup> = 2500 V
- **Breakdown voltage**  
as of 1,5 mm<sup>2</sup> = 5000 V
- **Insulation resistance**  
min. 20 MOhm x km
- **Minimum bending radius**  
approx. 10 x cable Ø
- **Radiation resistance**  
up to 100 x 10<sup>6</sup> cJ/kg (up to 100 Mrad)

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 6, col. 4, BS 6360 cl. 6 and IEC 60228 cl. 6
- Special core insulation, PUR
- Support core
- Core coding to DIN VDE 0293 (flexible cables)
- Cores stranded in layers with optimal lay-length
- Core wrapping with fleece
- Support braiding of synthetic fibres
- Halogen-free outer jacket PUR, colour orange

## Features

- High flexibility at low temperatures
- Usable for foodstuffs
- Abrasion and tear resistant
- Loadable under torsional stress

## Application

TROMM-PUR has taken the development of the neoprene type cables one step further. It is a robust, all-weather cable, halogen-free, tear and abrasion resistant and suitable for use in drag-chains, in ship docks, on building sites, for conveyor systems, in mining, for tunnels and road-building.

For the connecting the ski lift terminal positions to the control unit, surveillance of the joining rods in ski lift cables, as feeder cables for very high currents as for example in pump engineering, mining, locomotive and rail-carriage construction, for oil rig platforms, emergency power generators etc.

## Resistant to

- Oils and fats
- Non-alcoholic fuels and kerosene
- Atmospheric influences
- UV-radiation
- Oxygen and ozone
- Microbes and rotting
- Sea and waste water
- Vibrations

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

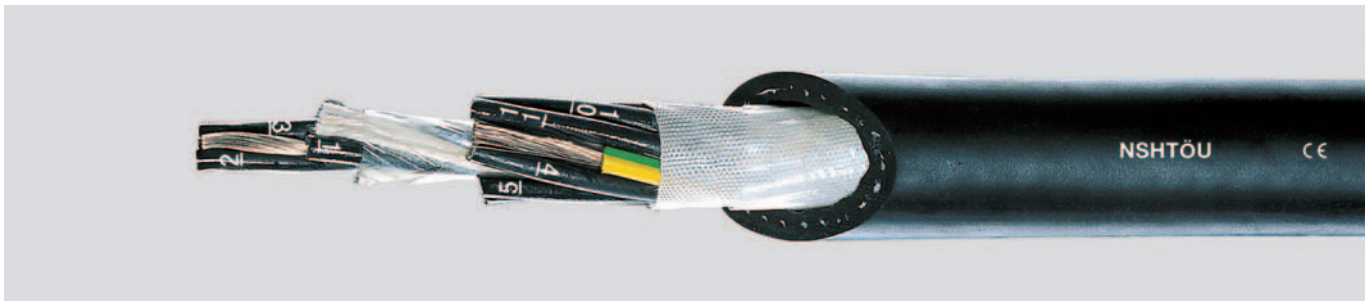
Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop. weight kg / km	Weight ca. kg / km	Breaking strain ca. kp	AWG-no. *)
26035	14G0,75	16,5	154	320	250	18
26036	12G1	17,5	115	300	500	17
26037	18G1	23,0	173	480	500	17
26038	3G1,5	9,5	43	110	200	16
26039	5G1,5	12,5	72	220	200	16
26040	7G1,5	15,5	101	270	250	16
26041	12G1,5	21,0	173	450	750	16
26042	18G1,5	27,0	259	620	750	16
26043	24G1,5	30,0	346	850	750	16
26044	30G1,5	34,0	533	1100	750	16
26045	42G1,5	40,0	605	1600	750	16
26046	4G2,5	14,0	96	250	200	14
26047	5G2,5	15,0	120	280	250	14
26048	7G2,5	18,0	168	360	300	14
26049	12G2,5	25,0	288	740	750	14
26050	24G2,5	36,0	576	1400	750	14
26051	30G2,5	40,0	864	1740	750	14
26052	36G2,5	44,0	998	2050	750	14
26053	7G4	22,0	269	600	500	12
26054	4G10	22,0	384	650	500	8
26055	4G16	27,0	614	1100	500	6
26056	4G25	30,0	960	1600	500	4
26057	4G35	36,0	1344	2050	1000	2
26058	4G50	42,0	1920	2800	1000	1
26059	5G16	34,0	768	1600	750	6

G = with green-yellow earth core

### \*) Note

AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> – see page T 15.





## Technical data

- Special-crane-drum cable to DIN VDE 0250 part 814
- **Temperature range** flexing -35°C to +70°C fixed installation -40°C to +70°C
- Max. conductor temperature under load + 60°C circuit conditions +200°C
- **Nominal voltage**  $U_0/U$  0,6/1 kV
- Max. permissible **nominal voltages** for three phase and one phase a.c. current installation  $U_0/U$  0,7/1,2 kV for direct current  $U_0/U$  0,9/1,8 kV
- **Test voltage** 2500 V
- **Insulation resistance** min. 10 MΩm x km
- **Minimum bending radius** 10 x cable Ø
- **Radiation resistance** up to  $20 \times 10^6$  cJ/kg (up to 20 Mrad)
- **Behaviour in fire** Test according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

## Cable structure

- Tinned copper fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Rubber core insulation G11 to DIN VDE 0207 part 20
- Core identification to DIN VDE 0293, 6 cores and above with numbering
- Cores stranded (without elongated central core) with max. lay-length of  $8 \times \varnothing$  over the stranding layers
- Suspension strains as strain relieving elements
- Textile tape
- Textile braiding as protection against torsion, embedded in inner filling sheath
- Neoprene outer jacket, type 5GM2 to DIN VDE 0207 part 21 Jacket colour black

## Features

- Designed and developed for trailing use
- Permissible running speed up to 120 m/min max.
- Polychloroprene-rubber (neoprene)-jacket, extremely cold resistant

## Application

Trailing cables are used for high mechanical stress, especially for applications with frequent winding and unwinding with simultaneous tensile and torsional stress, for building machinery, conveyors, shifts and cranes. They are used as robust and all weather resistant cables of roughest operations in mining and in flexible handling equipment and railway motors. Due to the neoprene outer jacket, the cables is resistant against ozone and radiation against oils, acids, fats, gasoline, solvents and chemicals. The cables are suitable for outdoor installation in dry, damp and wet places.

## Note

- During the installation and operation the tensile stress on conductor may not increase 15 N/mm<sup>2</sup>
- Acceleration not more than 0,4 m/sec<sup>2</sup>
- While using 1 to 2 convolutions should remain on the operated drum
- In case of high mechanical stress, especially of high dynamic tensile stress result high acceleration, the permissible stress must be defined in each case

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop. weight kg/km	Weight ca. kg/km	AWG-no. *)
26001	3G1,5	13,6	47	236	16
26029	4G1,5	14,0	58	274	16
26002	5G1,5	14,5	72	316	16
26003	7G1,5	18,8	101	440	16
26004	12G1,5	21,0	173	606	16
26005	16G1,5	24,5	231	696	16
26006	18G1,5	25,5	259	750	16
26007	24G1,5	27,5	346	1150	16
26008	30G1,5	29,5	432	1325	16
26009	3G2,5	15,3	72	305	14
26010	4G2,5	16,5	96	350	14
26011	5G2,5	17,5	120	465	14
26012	7G2,5	20,0	168	576	14
26013	12G2,5	23,5	288	850	14
26014	18G2,5	28,0	432	1181	14
26015	24G2,5	32,5	576	1550	14
26016	30G2,5	34,0	720	1810	14
26017	40G2,5	42,5	960	3110	14
26018	50G2,5	46,5	1200	3200	14

G = with green-yellow earth core

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop. weight kg/km	Weight ca. kg/km	AWG-no. *)
26019	4G4	18,5	154	510	12
26020	4G6	21,0	230	650	10
26021	4G10	26,0	384	1010	8
26023	4G16	29,0	614	1300	6
26024	4G25	35,0	960	2000	4
26025	4G35	37,5	1344	2610	2
26026	4G50	44,5	1920	3500	1
26027	4G70	49,0	2688	4600	2/0
26028	4G95	56,0	3648	6100	3/0
26030	5G4	21,5	192	635	12
26031	5G6	23,5	288	800	10
26022	5G10	28,0	480	1200	8
26032	5G16	31,5	768	1700	6

## \*) Note

AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup> – see page T 15.

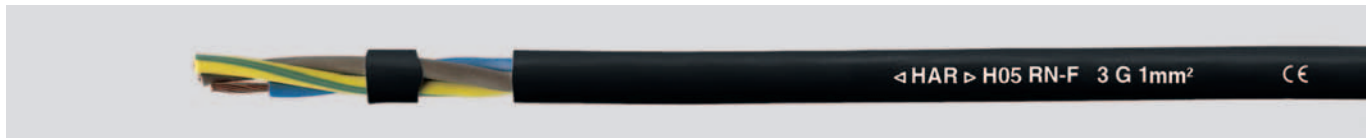
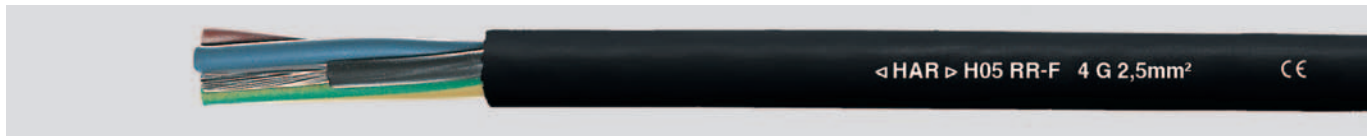
Further sizes available on request.

We are also able to offer special constructions for this cable type.

# H05 RR-F/H05 RN-F Rubber-Sheathed Cable

VDE approved

◁ HAR ▷



## Technical data

- Rubber insulation
- To DIN VDE 0282 part 4, HD 22.4 S3  
 $\triangle$  IEC 60245-4
- **Temperature range**  
 -30°C to +60°C
- Permissible **operating temperature**  
 at conductor 60°C
- **Nominal voltage**  $U_0/U$  300/500 V
- **Max. operating voltage**  
 three-phase and  
 one-phase a.c.  $U_0/U$  318/550 V  
 for direct current  $U_0/U$  413/825 V
- **Test voltage** 2000 V
- **Minimum bending radius**  
 approx. 7,5 x cable  $\varnothing$
- **Behaviour in fire**  
 according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

## Resistant to

- Ozone

## Note

- Oils and fats are allowed to come in touch

## Cable structure

- Bare or tinned copper conductors, fine stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228 cl. 5 and HD 383
- Rubber core insulation E14 to DIN VDE 0282 part 1
- Cores laid up
- Cores colour coded to DIN VDE 0293 and HD 186
- Outer jacket black:

RR-F = Rubber  
 RN-F = NEOPRENE®<sup>1)</sup>



## Application

**H05 RR-F** according to DIN VDE 0282, part 4

These cables are suitable for connecting electrical appliances, for example vacuum cleaner, flat irons, soldering irons, kitchen appliances, toaster, stoves etc. They were also used for medium mechanical stress in households and offices.

These cables are suitable for fixed installation in partition walls, furniture, decoration covering and in hollow spaces of prefabricated building parts.

They are suitable for use in open air for short time, in industries (also permitted to tailor workshops and of that kind) or in agriculture plants and for connecting commercial electrical tools.

**H05 RN-F** according to DIN VDE 0282, part 4

These cables are suitable for connecting electrical equipment with low mechanical stress in dry, damp and wet places as well in open air, for example as connection cable for horticulture tools. These cables can be used in contact with fats and oils (for example deep fryer). They are also suitable for fixed installation, for example in furniture, decoration covering, partition walls and in hollow spaces of prefabricated building parts. The installation in hazardous areas is allowed.

Foto: VULKAN

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

## H05 RR-F

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ mm min – max	Cop. weight kg/km	Weight ca. kg/km	AWG-no.†)
35001	2x0,75	5,7 – 7,4	14,4	60	18
35002	2x1	6,1 – 8,0	19,0	72	17
35003	2x1,5	7,6 – 9,8	29,0	98	16
35004	2x2,5	9,0 – 11,6	48,0	145	14
35005	3G0,75	6,2 – 8,1	21,6	74	18
35006	3G1	6,5 – 8,5	29,0	85	17
35007	3G1,5	8,0 – 10,4	43,0	120	16
35008	3G2,5	9,6 – 12,4	72,0	170	14
35009	4G0,75	6,8 – 8,8	29,0	78	18
35010	4G1	7,1 – 9,3	38,0	98	17
35011	4G1,5	9,0 – 11,6	58,0	150	16
35012	4G2,5	10,7 – 13,8	96,0	220	14
35013	5G1,5	9,8 – 12,7	72,0	180	16
35014	5G2,5	11,9 – 15,3	120,0	270	14

## Note

- H05 RR-F is replaced the former type NLH and NMH up to 2,5 mm<sup>2</sup>.
- H05 RN-F is replaced to former type NMH0u up to 1 mm<sup>2</sup>.
- \* not in VDE; adapted to VDE (H05RN-F); \*\* National type: A-05RN-F
- \*\*\* (A)05 RN-F, outer jacket colour grey, for window shades manufacturer

## H05 RN-F

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ mm min – max	Cop. weight kg/km	Weight ca. kg/km	AWG-no.†)
36001	2x0,75	5,7 – 7,4	14,4	78	18
36002	2x1	6,1 – 8,0	19,0	94	17
36003	3G0,75	6,2 – 8,1	21,6	94	18
36004	3G1	6,5 – 8,5	29,0	114	17
36005	3G1,5*	8,6 – 11,0	43,0	157	16
36008	4G0,75**	6,8 – 8,8	29,0	90	18
36007	4G0,75***	6,8 – 8,8	29,0	90	18
36006	5G1,5*	10,5 – 13,5	72,0	228	16

G = with green-yellow earth core X = without green-yellow earth core

†) **Note:** AWG sizes are approximate equivalent values.

The actual cross-section is in mm<sup>2</sup> – see page T 15.

Further sizes and cross-sections available on request.

<sup>1)</sup> Registered trade mark of Du Pont de Nemours

# H07 RN-F Rubber-Sheathed Cable, VDE approved, harmonized type

◁ HAR ▷



## Technical data

- Rubber sheathed cable H07 RN-F to DIN VDE 0282 part 4, HD 22.4 S3  
 $\triangle$  IEC 60245-4
- **Temperature range**  
 -30°C to +60°C
- Permissible **operating temperature** at conductor +60°C
- **Nominal voltage**  $U_0/U$  450/750 V
- Max. permissible **operating voltage** in three phase and one phase a.c. system  $U_0/U$  476/825 V  
 direct current-system  $U_0/U$  619/1238 V
- **Test voltage** 2500 V
- **Permanent tensile load**  
 max. 15 N/mm<sup>2</sup> under consideration of total copper cross-sections
- **Minimum bending radius**  
 for fixed installation 4 x cable  $\varnothing$   
 for guiding over roller 7,5 x cable  $\varnothing$   
 during winding on drums  
 5 - 7 x cable  $\varnothing$
- **Test of behaviour compared to environmental influences**
- Test according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Ozone resistant of the insulation to DIN VDE 0472 part 805, test method A or part 805 A1, test method C

## Cable structure

- Copper conductor fine wire stranded, bare or tinned to DIN VDE 0295 cl. 5, BS 6360 cl. 5, IEC 60228 cl. 5 and HD 383
- Rubber core insulation EI4 to DIN VDE 0282 part 1
- Insulation thickness to DIN VDE 0282 part 4
- Core identification to DIN VDE 0293 and HD 186
- Core colours
  - up to 5 cores one-coloured
  - 6 and more cores, black with numbering
  - 3 and above, with green-yellow earth core
  - 2 cores without green-yellow earth core
- Cores stranded in layers with optimal lay-length
- Outer jacket of rubber black, rubber compound to DIN VDE 0282 part 1 (NEOPRENE<sup>®1)</sup>)
- Sheath thickness to DIN VDE 0282 part 4

## Note

The core identification of a single core jacketed, of an insulated wire is black. For application as a protective core, the ends are to be identified with green-yellow and the middle conductor with light blue.

## Application

Heavy duty rubber-sheathed flexible cables are suited for use for medium mechanical stress in dry, damp and wet areas as well as in open air and in agriculture plants. They are used for equipment in industry works such as boilers, heating plates, hand lamps, electric tools such as drills, circular saws and homework tools as well as for transportable motors or machines at site. These cables are also suitable for fixed installation on plaster, in temporary buildings and residential barracks. They are suitable for direct laying on components and mechanical parts of machines, for example lifts and cranes. They can be used in case of protected and fixed installation in tubes or in equipment as well as rotor connecting cable of motors with a working voltage up to 1000 V alternating voltage or a direct voltage up to 750 V against ground. The operating direct voltage is permitted up to 900 V against ground when they are used in rail-coaches. Installation in hazardous areas according to DIN VDE 0165 is allowed.

## Resistant to

- Ozone
- Weather

G = with green-yellow earth core  
 X = without green-yellow earth core

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ mm min - max	Cop. weight kg/km	Weight ca. kg/km	AWG-no.*)
37001	1 x 1,5	5,7 - 7,1	14,4	58	16
37002	1 x 2,5	6,3 - 7,9	24,0	71	14
37003	1 x 4	7,2 - 9,0	38,0	100	12
37004	1 x 6	7,9 - 9,8	58,0	130	10
37005	1 x 10	9,5 - 11,9	96,0	230	8
37006	1 x 16	10,8 - 13,4	154,0	290	6
37007	1 x 25	12,7 - 15,8	240,0	420	4
37008	1 x 35	14,3 - 17,9	336,0	530	2
37009	1 x 50	16,5 - 20,6	480,0	750	1
37010	1 x 70	18,6 - 23,3	672,0	960	2/0
37011	1 x 95	20,8 - 26,0	912,0	1250	3/0
37012	1 x 120	22,8 - 28,6	1152,0	1560	4/0
37013	1 x 150	25,2 - 31,4	1440,0	1900	300 kcmil
37014	1 x 185	27,6 - 34,4	1776,0	2300	350 kcmil
37015	1 x 240	30,6 - 38,3	2304,0	2950	500 kcmil
37016	1 x 300	33,5 - 41,9	2880,0	3600	600 kcmil
37017	1 x 400	37,4 - 46,8	3840,0	4600	750 kcmil
37018	1 x 500	41,3 - 52,0	4800,0	6000	1000 kcmil
37019	2 x 1	7,7 - 10,0	19,0	98	17
37020	2 x 1,5	8,5 - 11,0	29,0	135	16
37021	2 x 2,5	10,2 - 13,1	48,0	193	14
37022	2 x 4	11,8 - 15,1	77,0	280	12

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ mm min - max	Cop. weight kg/km	Weight ca. kg/km	AWG-no.*)
37023	2 x 6	13,1 - 16,8	115,0	330	10
37024	2 x 10	17,7 - 22,6	192,0	586	8
37025	2 x 16	20,2 - 25,7	307,0	810	6
37026	2 x 25	24,3 - 30,7	480,0	1160	4
37027	3G1	8,3 - 10,7	29,0	130	17
37028	3G1,5	9,2 - 11,9	43,0	165	16
37029	3G2,5	10,9 - 14,0	72,0	235	14
37030	3G4	12,7 - 16,2	115,0	320	12
37031	3G6	14,1 - 18,0	173,0	420	10
37032	3G10	19,1 - 24,2	288,0	810	8
37033	3G16	21,8 - 27,6	461,0	1050	6
37034	3G25	26,1 - 33,0	720,0	1250	4
37035	3G35	29,3 - 37,1	1008,0	1900	2
37036	3G50	34,1 - 42,9	1440,0	2600	1
37037	3G70	38,4 - 48,3	2016,0	3400	2/0
37038	3G95	43,3 - 54,0	2736,0	4450	3/0
37039	3G120	47,4 - 60,0	3456,0	5180	4/0
37040	3G150	52,0 - 66,0	4320,0	6500	300 kcmil
37041	3G185	57,0 - 72,0	5328,0	7860	350 kcmil
37042	3G240	65,0 - 82,0	6192,0	10224	500 kcmil
37043	3G300	72,0 - 90,0	8640,0	12620	600 kcmil

## \*) Note

AWG sizes are approximate equivalent values.  
 The actual cross-section is in mm<sup>2</sup> - see page T 15.  
<sup>1)</sup> Registered trade mark of Du Pont de Nemours

Continuation ▶

Further dimensions and cross-sections available on request.  
 H07 RN-F = harmonized rubber-sheathed cable, working voltage 750 V, fine stranded.

# H07 RN-F Rubber-Sheathed Cable

## VDE approved, harmonized type



CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer ø mm min – max	Cop. weight kg / km	Weight ca. kg / km	AWG-no.†)
37044	4G1	9,2 – 11,9	38,0	150	17
37045	4G1,5	10,2 – 13,1	58,0	200	16
37046	4G2,5	12,1 – 15,5	96,0	290	14
37047	4G4	14,0 – 17,9	154,0	395	12
37048	4G6	15,7 – 20,0	230,0	540	10
37049	4G10	20,9 – 26,5	384,0	950	8
37050	4G16	23,8 – 30,1	614,0	1260	6
37051	4G25	28,9 – 36,6	960,0	1860	4
37052	4G35	32,5 – 41,1	1344,0	2380	2
37053	4G50	37,7 – 47,5	1920,0	3190	1
37054	4G70	42,7 – 54,0	2688,0	4260	2/0
37055	4G95	48,4 – 61,0	3648,0	5600	3/0
37056	4G120	53,0 – 66,0	4608,0	6830	4/0
37057	4G150	58,0 – 73,0	5760,0	8320	300 kcmil
37058	4G185	64,0 – 80,0	7104,0	9800	350 kcmil
37059	4G240	72,0 – 91,0	9216,0	12100	500 kcmil
37060	4G300	80,0 – 101,0	11520,0	15200	600 kcmil
37061	5G1,5	11,2 – 14,4	72,0	240	16

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer ø mm min – max	Cop. weight kg / km	Weight ca. kg / km	AWG-no.†)
37062	5G2,5	13,3 – 17,0	120,0	345	14
37063	5G4	15,6 – 19,9	192,0	485	12
37064	5G6	17,5 – 22,2	288,0	650	10
37065	5G10	22,9 – 29,1	480,0	1200	8
37066	5G16	26,4 – 33,3	768,0	1550	6
37067	5G25	32,0 – 40,4	1200,0	2250	4
37068	5G35	36,8 – 45,8	1680,0	2750	2
37091	5G50	ca. 44,5	2400,0	3950	1
37092	7G1,5	ca. 14,5	101,0	375	16
37093	12G1,5	ca. 18,3	175,0	460	16
37094	19G1,5	ca. 23,5	274,0	810	16
37095	24G1,5	ca. 25,5	346,0	1015	16
37079	7G2,5	16,5 – 20,0	168,0	520	14
37096	12G2,5	ca. 19,0	288,0	760	14
37097	18G2,5	ca. 25,0	432,0	850	14
37098	19G2,5	ca. 27,0	456,0	1075	14
37099	24G2,5	ca. 32,0	576,0	1390	14

Further dimensions and cross-sections available on request.  
G = with green-yellow earth core

H07 RN-F = harmonized rubber-sheathed cable, working voltage 750 V, fine stranded.

### Current ratings for H07 RN F for<sup>1</sup> current supply in industrial application

Operating temperature at conductor 60°C; Ambient temperature 30°C (Air)

Number of cores	1-core		2-cores	3-cores	3-cores	4-cores	5-cores
	2 cores loaded	3 cores loaded	2 cores loaded	2 cores loaded	3 cores loaded	3 cores loaded	3 cores loaded
Cross-section, mm <sup>2</sup>	Current ratings in Ampere (A)						
4	34	30	34	35	29	30	30
6	43	38	43	44	36	37	38
10	60	53	60	62	51	52	54
16	79	71	79	82	67	69	71
25	104	94	105	109	89	92	94
35	129	117	–	135	110	114	–
50	162	148	–	169	138	143	–
70	202	185	–	211	172	178	–
95	240	222	–	250	204	210	–
120	280	260	–	292	238	246	–
150	321	300	–	335	273	282	–
185	363	341	–	378	309	319	–
240	433	407	–	447	365	377	–
300	497	468	–	509	415	430	–
400	586	553	–	–	–	–	–
500	670	634	–	–	–	–	–
630	784	742	–	–	–	–	–

#### Note

For the method of installation

- Single core cables are bunched (unit-form)
- 2 cores cables laid parallel with contact
- 3 cores cables are in triangle-form

#### Conversion factors for deviating ambient temperature

Ambient temperature at air °C	30	35	40	45	50	55
Factor	1,0	0,91	0,82	0,71	0,58	0,41

# A07 RN-F Rubber-Sheathed Cable

VDE approved, authorised national type



## Technical data

- Rubber sheathed cable A07 RN-F to DIN VDE 0282 part 4
- **Temperature range**  
-30°C to +60°C
- Permissible **operating temperature** at conductor +60°C
- **Nominal voltage**  $U_0/U$  450/750 V  
max. permissible **operating voltage** in three phase and one phase a.c. system  $U_0/U$  476/825 V  
direct current-system  $U_0/U$  619/1238 V
- **Test voltage** 2500 V
- **Permanent tensile load**  
max. 15 N/mm<sup>2</sup> under consideration of total copper cross-sections
- **Minimum bending radius**  
for fixed installation 4xcable  $\varnothing$   
for guiding over roller 7,5xcable  $\varnothing$   
during winding on drums  
5-7xcable  $\varnothing$
- **Test of behaviour compared to environmental influences**
- Behaviour in fire to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Ozone resistant of the insulation to DIN VDE 0472 part 805, test method A or part 805 A1, test method C

## Cable structure

- Copper conductor fine wire stranded, bare or tinned to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Rubber core insulation E14 to DIN VDE 0281 part 1
- Insulation thickness to DIN VDE 0282 part 4
- Core identification to DIN VDE 0293
- Core colours:  
6 and more cores green-yellow and the other cores black with numbering
- Cores stranded in layers in optimal lay-length
- Outer jacket of rubber black, rubber compound to DIN VDE 0281 part 1 (NEOPRENE®<sup>1)</sup>)
- Sheath thickness to DIN VDE 0282 part 4

## Note

The core identification of a single core jacketed, of an insulated wire is black. For application as a protective core, the ends are to be identified with green-yellow and the middle conductor with light blue.

## Application

Heavy duty rubber-sheathed flexible cables are suited for use for medium mechanical stress in dry, damp and wet areas as well as in open air and in agriculture plants.

They are used for equipment in industry works such as boilers, heating plates, hand lamps, electric tools such as drills, circular saws and homework tools as well as for transportable motors or machines at site.

These cables are also suitable for fixed installation on plaster, in temporary buildings and residential barracks. They are suitable for direct laying on components and mechanical parts of machines, for example lifts and cranes.

They can be used in case of protected and fixed installation in tubes or in equipment as well as rotor connecting cable of motors with a working voltage up to 1000 V alternating voltage or a direct voltage up to 750 V against ground.

The operating direct voltage is permitted up to 900 V against ground when they are used in rail-coaches.

Installation in hazardous areas according to DIN VDE 0165 is allowed.

## Resistant to

- Ozone
- Weather

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

## A07 RN-F-J (with green-yellow protective conductor)

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ mm min - max	Cop. weight kg/km	Weight ca. kg/km	AWG-no. <sup>*)</sup>
37069	7G1,5	14,0 <sup>1)</sup> -17,5	101	370	16
37070	7G2,5	16,5 <sup>1)</sup> -20,0	168	500	14
37071	12G1,5	17,6-22,4	173	520	16
37072	12G2,5	20,6-26,2	288	720	14
37078	19G1,5	21,5-25,5	274	800	16
37075	19G2,5	25,0-29,5	456	1100	14
37074	24G2,5	28,8-36,4	576	1350	14
37075	27G1,5	25,5-31,5	385	1100	16
37076	27G2,5	30,0-37,0	640	1521	14
37077	37G2,5	34,0-37,5	720	1940	14

## \*) Note

AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> - see page T 15.

## A07 RN-F-O (without green-yellow protective conductor)

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ mm min - max	Cop. weight kg/km	Weight ca. kg/km	AWG-no. <sup>*)</sup>
37080	3x1,5	9,2-11,9	43	165	16
37081	3x2,5	10,9-14,0	72	235	14
37082	3x4*	12,7-16,2	115	320	12
37083	3x6*	14,1-18,0	173	495	10
37084	3x10*	19,1-24,2	288	880	8
37085	3x16*	21,8-27,6	461	1095	6
37086	3x25*	26,1-33,0	720	1450	4
37087	3x35*	29,3-37,1	1008	1900	2
37088	3x50*	34,1-42,9	1440	2600	1
37089	4x10	20,9-26,5	384	1065	8
37090	4x25	28,9-36,6	960	1995	4

G = with green-yellow earth core  
X = without green-yellow earth core

<sup>1)</sup> Registered trade mark of Du Pont de Nemours

<sup>1)</sup> Valid for design with central core + 7 cores.  
A07 RN-F = Authorized national rubber-sheathed cable, nominal voltage 750 V, fine wire stranded.

\* We manufacture these positions from time to time for several-customers.  
If you are interested, we request your enquiry, so as to minimize the minimum quantity.



## Technical data

- halogen-free cross-linked control cable to DIN VDE 0282 part 13, HD 22.13 S1+A1
- **Temperature range**  
flexing - 5°C to +70°C  
fixed installation -20°C to +70°C
- Permissible **operating temperature** at conductor +70°C
- **Nominal voltage**  
fixed installation  $U_0/U$  0,6/1 kV  
flexing  $U_0/U$  450/750 V
- **Test voltage** 2500 V
- **Permanent tensile load**  
max. 15 N/mm<sup>2</sup> under consideration of total copper cross-sections
- **Minimum bending radius**  
for fixed installation 4xcable  $\varnothing$   
flexing 10xcable  $\varnothing$
- **Test**  
- Behaviour in fire to EN 50265-2-1 (VDE 0472 part 804) and HD 405.3 cat. C  
- Corrosiveness of combustion gases to EN 50267-2-2  
- Smoke density to HD 606  
- Ozone resistant of single corethe insulation to EN 60811-2-1, HD 22.2

## Cable structure

- Bare copper, fine wire stranded conductor to DIN VDE 0295 cl. 5, BS 6360 cl. 5, and IEC 60228 cl. 5 and HD 383
- Core insulation cross-linked, halogen-free, EI8 to DIN VDE 0282 part 1 (HD 22.1 S3)
- Core identification to DIN VDE 0293 and HD 186
- Core colours to DIN VDE 0293
- Cores stranded in layers with optimal lay-length
- Outer jacket, cross-linked halogen-free EM8 to DIN VDE 0282 part 1 (HD 22.1 S3)
- Sheath colour black

## Application

Single and multicore sheathed cable, with low smoke and corrosive gas production in case of fire for interior use. Not suitable for continuous outside use. In this case, cable with a special tested covering should be used. Skin contact should be avoided when the cable is used in high temperatures.

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ mm min - max	Cop. weight kg / km	Weight ca. kg / km	AWG-no. *)
37176	1 x 1,5	5,7 - 7,1	14,4	58	16
37177	1 x 2,5	6,3 - 7,9	24,0	71	14
37178	1 x 4	7,2 - 9,0	38,0	100	12
37179	1 x 6	7,9 - 9,8	58,0	130	10
37180	1 x 10	9,5 - 11,9	96,0	230	8
37181	1 x 16	10,8 - 13,4	154,0	290	6
37182	1 x 25	12,7 - 15,8	240,0	420	4
37183	1 x 35	14,3 - 17,9	336,0	530	2
37184	1 x 50	16,5 - 20,6	480,0	750	1
37185	1 x 70	18,6 - 23,3	672,0	960	2/0
37186	1 x 95	20,8 - 26,0	912,0	1250	3/0
37187	1 x 120	22,8 - 28,6	1152,0	1560	4/0
37188	1 x 150	25,2 - 31,4	1440,0	1900	300 kcmil
37189	1 x 185	27,6 - 34,4	1776,0	2300	350 kcmil
37190	1 x 240	30,6 - 38,3	2304,0	2950	500 kcmil
37191	1 x 300	33,5 - 41,9	2880,0	3600	600 kcmil
37192	1 x 400	37,4 - 46,8	3840,0	4600	750 kcmil
37193	1 x 500	41,3 - 52,0	4800,0	6000	1000 kcmil
37194	2 x 1	7,7 - 10,0	19,0	95	17
37195	2 x 1,5	8,5 - 11,0	29,0	119	16
37196	2 x 2,5	10,2 - 13,1	48,0	172	14
37197	2 x 4	11,8 - 15,1	77,0	239	12

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ mm min - max	Cop. weight kg / km	Weight ca. kg / km	AWG-no. *)
37198	2 x 6	13,1 - 16,8	115,0	319	10
37199	2 x 10	17,7 - 22,6	192,0	572	8
37200	2 x 16	20,2 - 25,7	307,0	767	6
37201	2 x 25	24,3 - 30,7	480,0	1154	4
37202	3G1	8,3 - 10,7	29,0	115	17
37203	3G1,5	9,2 - 11,9	43,0	144	16
37204	3G2,5	10,9 - 14,0	72,0	211	14
37205	3G4	12,7 - 16,2	115,0	290	12
37206	3G6	14,1 - 18,0	173,0	391	10
37207	3G10	19,1 - 24,2	288,0	706	8
37208	3G16	21,8 - 27,6	461,0	961	6
37209	3G25	26,1 - 33,0	720,0	1438	4
37210	3G35	29,3 - 37,1	1008,0	1814	2
37211	3G50	34,1 - 42,9	1440,0	2550	1
37212	3G70	38,4 - 48,3	2016,0	3210	2/0
37213	3G95	43,3 - 54,0	2736,0	4423	3/0
37214	3G120	47,4 - 60,0	3456,0	5405	4/0
37215	3G150	52,0 - 66,0	4320,0	6725	300 kcmil
37216	3G185	57,0 - 72,0	5328,0	8222	350 kcmil
37217	3G240	65,0 - 82,0	6192,0	10224	500 kcmil
37218	3G300	72,0 - 90,0	8640,0	12620	600 kcmil

Continuation ►

G = with green-yellow earth core  
X = without green-yellow earth core

### \*) Note

AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> - see page T 15.



CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer ø mm min – max	Cop. weight kg / km	Weight ca. kg / km	AWG-no.¹)
37219	4G1	9,2– 11,9	38,0	141	17
37220	4G1,5	10,2– 13,1	58,0	176	16
37221	4G2,5	12,1– 15,5	96,0	235	14
37222	4G4	14,0– 17,9	154,0	365	12
37223	4G6	15,7– 20,0	230,0	501	10
37224	4G10	20,9– 26,5	384,0	872	8
37225	4G16	23,8– 30,1	614,0	1194	6
37226	4G25	28,9– 36,6	960,0	1822	4
37227	4G35	32,5– 41,1	1344,0	2307	2
37228	4G50	37,7– 47,5	1920,0	3253	1
37229	4G70	42,7– 54,0	2688,0	4130	2/0
37230	4G95	48,4– 61,0	3648,0	5720	3/0
37231	4G120	53,0– 66,0	4608,0	6965	4/0
37232	4G150	58,0– 73,0	5760,0	8644	300 kcmil
37233	4G185	64,0– 80,0	7104,0	10598	350 kcmil
37234	4G240	72,0– 91,0	9216,0	12100	500 kcmil
37235	4G300	80,0–101,0	11520,0	15200	600 kcmil
37236	5G1	10,2–13,1	48,0	170	17
37237	5G1,5	11,2–14,4	72,0	214	16

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer ø mm min – max	Cop. weight kg / km	Weight ca. kg / km	AWG-no.¹)
37238	5G2,5	13,3–17,0	120,0	316	14
37239	5G4	15,6–19,9	192,0	448	12
37240	5G6	17,5–22,2	288,0	607	10
37241	5G10	22,9–29,1	480,0	1075	8
37242	5G16	26,4–33,3	768,0	1480	6
37243	5G25	32,0–40,4	1200,0	2255	4
37244	6G1,5	13,4–17,2	84,0	287	16
37245	6G2,5	15,7–20,0	144,0	420	14
37246	6G4	18,2–23,2	230,0	583	12
37247	7G1,5	ca. 14,4	101,0	303	16
37248	7G2,5	ca. 17,0	168,0	448	14
37249	12G1,5	17,6–22,4	173,0	496	16
37250	12G2,5	20,6–26,2	288,0	724	14
37251	12G4	24,4–30,9	461,0	1042	12
37252	18G1,5	20,7–26,3	259,0	702	16
37253	18G2,5	24,4–30,9	432,0	1045	14
37254	18G4	28,8–36,4	691,0	1430	12
37255	24G1,5	24,3–30,7	346,0	935	16
37256	24G2,5	28,8–36,4	576,0	1325	14
37257	36G1,5	27,8–35,2	518,0	1297	16
37258	36G2,5	33,2–41,8	864,0	1949	14

G = with green-yellow earth core  
X = without green-yellow earth core

¹) Note  
AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> – see page T 15.



### Technical data

- Heavy duty rubber cable to DIN VDE 0250 part 812
- **Conductor resistance** to DIN VDE 0295
- **Temperature range**  
flexing -25°C to +80°C  
fixed installation -40°C to +80°C
- Permissible **operating temperature** at conductor +80°C
- **Nominal voltage**  $U_0/U$  0,6/1 kV
- **Operating voltage**  
three-phase and one-phase a.c.  
 $U_0/U = 0,7/1,2$  kV  
direct current system  
 $U_0/U = 0,9/1,8$  kV
- **Test voltage** 3000 V
- **Insulation resistance**  
min. 20 MOhm x km
- **Tensile strength**  
statical load:  
total cross-section x 15 N/mm<sup>2</sup>
- **Minimum bending radius**  
fixed installation 4x cable  $\varnothing$   
flexing 10x cable  $\varnothing$   
without forced operation 15x cable  $\varnothing$
- **Behaviour in fire**  
according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

### Cable structure

- Tinned copper conductor, fine wire stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Rubber insulation 3GI3 (EPR), to DIN VDE 0207 part 20
- Green-yellow earth-core for 3-cores and above
- Core identification: one green-yellow earth core and others black cores with continuous white numbering to DIN VDE 0293. The basic-line prohibits confusion to recognise the individual cores.
- Cores stranded (multi cores)
- Rubber inner sheath, GM1b, rubber-compound to DIN VDE 0207 part 21
- Rubber outer jacket, yellow rubber-compound 5GM5 to DIN VDE 0207 part 21, oil resistant
- Imprint on outer sheath:  
VDE-code, type, number of cores and cross-section
- Test of oil resistant to  
DIN VDE 0472 part 803, test method A

### Features

- Ozone resistance
- High insulation resistance
- Resistant against hot penetration
- Low abrasion
- High notch resistant
- Resistant against oils, fats and chemicals

### Application

Heavy duty rubber cable are suited as a connecting cable for very high mechanical stress in underground mining and tools for use in industries and outdoor use. They are also used for mining industry, surface mining, stone-pits, on building sites, outdoors as well as indoors. The cable is suitable for fixed installation on plaster in dry, damp and wet areas. A long duration of life is guaranteed under extreme operating conditions. The cable is not suitable for drumming and use in all types of machinery, such as robots, handling units and energy transfer units, where constant mobility is essential. The insulation of a plastic-rubber compound on EPR basis improves the resistance to ozone in order to avoid the formation of cracks due to ozone and insulation damages in switch-boards.

### Note

The code identification of a single core jacketed of an insulated wire is black. For application as a protective core, the ends are to be identified with green-yellow and the middle conductor with light blue.

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-no.¹)
38001	1 x 16	11,5	154	336	6
38002	1 x 25	14,5	240	473	4
38003	1 x 35	15,5	336	635	2
38004	1 x 50	18,0	480	866	1
38005	1 x 70	20,5	672	1145	2/0
38006	1 x 95	23,0	912	1475	3/0
38007	1 x 120	25,0	1152	1832	4/0
38008	1 x 150	28,0	1440	2000	300 kcmil
38009	1 x 185	30,0	1776	2450	350 kcmil
38010	1 x 240	33,0	2304	3190	500 kcmil
38011	2 x 2,5	13,2	48	205	14
38012	3G1,5	12,5	43	173	16
38013	3G2,5	14,0	72	247	14
38014	3G4	16,8	115	336	12
38015	3G6	18,1	173	520	10
38016	4G1,5	13,0	58	210	16
38017	4G2,5	16,0	96	305	14
38018	4G4	18,0	154	415	12
38019	4G6	19,5	230	641	10
38020	4G10	24,0	384	1113	8

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Cop. weight kg / km	Weight ca. kg / km	AWG-no.¹)
38021	4G16	28,5	614	1412	6
38022	4G25	35,0	960	2095	4
38023	4G35	37,0	1344	2777	2
38024	4G50	44,5	1920	3817	1
38025	4G70	47,0	2688	5071	2/0
38026	4G95	54,0	3648	6636	3/0
38027	4G120	60,0	4608	7000	4/0
38028	5G1,5	14,1	72	252	16
38029	5G2,5	17,2	120	362	14
38030	5G4	19,0	192	509	12
38031	5G6	21,5	288	798	10
38035	5G10	25,0	480	1120	8
38036	5G16	31,0	768	1680	6
38037	5G25	36,5	1200	2430	4
38038	7G1,5	17,5	101	470	16
38032	7G2,5	18,5	168	546	14
38039	10G1,5	19,8	144	560	16
38033	12G2,5	24,0	288	851	14
38040	18G2,5	28,7	432	1230	14
38034	19G2,5	29,2	466	1260	14

¹) Note

AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> – see page T 15.

G = with green-yellow earth core  
X = without green-yellow earth core

# H05G-U/-K, H07G-U/-R/-K Rubber-Single Core heat-resistant, VDE approved (old type N4GA, N4GAF)

◁ HAR ▷



## Technical data

- Heat-resistant (+120°C) rubber-insulated cable to DIN VDE 0282 part 7 and HD 22.7 S2
- Max. permissible **operating temperature** at conductor +110°C
- **Lowest ambient temperatures** flexing up to –25°C fixed installation up to –40°C
- **Nominal voltage**
  - H05G U<sub>0</sub>/U 300/500 V
  - H07G U<sub>0</sub>/U 450/750 V
- **Test voltage**
  - H05G 2000 V
  - H07G 2500 V
- **Minimum bending radius** approx. 7 x cable Ø

## Cable structure

- Bare (or tinned) copper conductor to DIN VDE 0295 and IEC 60228, BS 6360 and HD 383
  - single wire, solid: class 1
  - multi stranded wires: class 2
  - fine wires: class 5
- Rubber core insulation, compound type EI3 (EVA) to DIN VDE 0282 part 7 (ΔDIN VDE 0207 part 20)
- Separating layer over bare conductor (for tinned conductor is optional)
- Core identification to DIN VDE 0293
- Standard colour black
- On request the following colours are available: blue, brown, grey, orange, pink, turquoise, white, violet, yellow, green and also two colour combination green-yellow. Single core colours green and yellow can only be applied where the safety regulations are allowed. The identification for the lighting chain cable is green permitted.

## Application

For inside wiring of switch boards and distributors as well as of operating parts such as in or on lights, for the connection of electric heaters with a nominal voltage up to 1000 V alternating voltage or up to 750 V direct voltage against ground. The cables are all allowed for laying in tubes, on and under the plaster.

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

### H05G-U (single wire)\*

Part No.	Cross-sec. mm <sup>2</sup>	Outer Ø		Cop. weight kg / km	Weight ca. kg / km	AWG-no.†)
		ca. value mm	max. value mm			
541___	0,5	1,9	2,4	4,8	10	20
542___	0,75	2,1	2,6	7,2	15	18
543___	1	2,2	2,8	9,6	16	17

### H05G-K (fine wires)\*

Part No.	Cross-sec. mm <sup>2</sup>	Outer Ø		Cop. weight kg / km	Weight ca. kg / km	AWG-no.†)
		ca. value mm	max. value mm			
550___	0,5	2,1	2,6	4,8	13	20
551___	0,75	2,2	2,8	7,2	16	18
552___	1	2,4	2,9	9,6	22	17

#### \*) Note

AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> – see page T 15.

___00 green	___05 orange	___09 violet
___01 black	___06 pink	___10 yellow
___02 blue	___07 turquoise	___11 green-yellow
___03 brown	___08 white	
___04 grey		

\* Please quote the individual part-no. in your order with the codes for core colours of the key-positions.

### H07G-U (single wire)\*

Part No.	Cross-sec. mm <sup>2</sup>	Outer Ø		Cop. weight kg / km	Weight ca. kg / km	AWG-no.†)
		ca. value mm	max. value mm			
544___	1,5	2,8	3,5	14,4	24	16
545___	2,5	3,4	4,3	24,0	35	14
546___	4	4,0	5,0	38,0	53	12

### H07G-K (fine wires)\*

Part No.	Cross-sec. mm <sup>2</sup>	Outer Ø		Cop. weight kg / km	Weight ca. kg / km	AWG-no.†)
		ca. value mm	max. value mm			
553___	1,5	3,0	3,7	14,4	24	16
554___	2,5	3,6	4,5	24,0	42	14
555___	4	4,3	5,4	38,0	61	12
556___	6	4,8	6,0	58,0	78	10
557___	10	6,0	7,6	96,0	130	8
558___	16	7,1	8,9	154,0	212	6
559___	25	8,8	11,0	240,0	323	4
560___	35	10,1	12,6	336,0	422	2
561___	50	11,9	14,9	480,0	527	1
562___	70	13,6	17,0	672,0	726	2/0
563___	95	15,5	19,3	912,0	937	3/0
564___	120	17,1	21,4	1152,0	1192	4/0

### H07G-R (multi wires)\*

Part No.	Cross-sec. mm <sup>2</sup>	Outer Ø		Cop. weight kg / km	Weight ca. kg / km	AWG-no.†)
		ca. value mm	max. value mm			
547___	6	4,7	5,9	58,0	72	10
548___	10	6,0	7,4	96,0	123	8
549___	16	6,8	8,5	154,0	184	6

# Tauchflex-R 750 V, blue Submersible-pump cable



## Technical data

- Special cables corresponding to DIN VDE 0250 and 0282 part 810
- **Conductor resistance** to DIN 57295/VDE 0295
- **Temperature range** –40°C to +80°C (max. temperature for the outer surface)
- Permissible **operating temperature** at conductor +90°C
- **Nominal voltage**  $U_0/U$  450/750 V
- **Operating voltage** for alternating and three-phase currents  $U_0/U$  413/825 V, for direct currents  $U_0/U$  619/1238 V
- **Current rating** to DIN 57100 part 523/VDE 0100 part 523
- **Test voltage** 15 min 2,5 kV
- Max. permitted **tensile stress** per  $\text{mm}^2$  conductor 15 N
- **Minimum bending radius** flexing
  - up to 8 mm cond.  $\varnothing$
  - min. 3 x cond.  $\varnothing$
  - above 8 mm to 12 mm cond.  $\varnothing$
  - min. 4 x cond.  $\varnothing$
  - above 12 mm cond.  $\varnothing$
  - min. 5 x cond.  $\varnothing$
  - fixed installation
  - up to 12 mm cond.  $\varnothing$
  - min. 3 x cond.  $\varnothing$
  - above 12 mm cond.  $\varnothing$
  - min. 4 x cond.  $\varnothing$

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Foil as separator
- EPR core insulation, compound type 3GI3 to DIN VDE 0207 part 20
- Cores stranded in layers with optimal lay-length
- EPR outer sheath, blue, compound type 5GM3 adapted to DIN VDE 0207 part 21
- Colour code according to DIN VDE 0293

## Advantages

- Good insulation properties when submerged in water
- Minimal weight gain under water
- The mechanical stability of the insulation materials remains constant even when submerged

### \* Note

AWG sizes are approximate equivalent values. The actual cross-section is in  $\text{mm}^2$  – see page T 15.

## Application

Tauchflex-R is a special cable for use as a connecting and control cable for submersible motor pumps, underwater floodlights, floating switch and has proven its worth for constant use in waste water or water for general use\* up to the depth of immersion of 500 m (50 bar) and under temperatures of up to 70°C.

Tauchflex-R can also be installed for use in dry, damp and humid areas as well as in the open air. Not suitable for the installation in hazardous areas.

### \* Note

**Not suitable for drinking water.**

**Cables for use in drinking water with BAM-certificate on request**

**(BAM = Bundesanstalt für Materialprüfung/Federal Institute for Materials Testing).**

## Features

- Installation adaptability for machinery material of protection class II
- As rotor-connection cable for motors up to 1000 V with protected fixed installation in tubes
- Temperature limit
  - in water: max. +40°C, max. +60°C with limited duration of life
  - in air: flexible –50°C to +80°C
  - stationary –30°C to +80°C

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. $\text{mm}^2$	Outer $\varnothing$ ca. mm	Cop. weight kg/km	Weight ca. kg/km	AWG-no. *)
37100	1 x 1,5	7,2	14	54	16
37101	1 x 2,5	8,0	24	76	14
37102	1 x 4	9,0	38	105	12
37103	1 x 6	11,0	58	135	10
37104	1 x 10	12,4	96	200	8
37105	1 x 16	14,4	154	290	6
37106	1 x 25	16,5	240	400	4
37107	1 x 35	18,3	336	560	2
37108	1 x 50	21,1	480	730	1
37109	1 x 70	23,5	672	1000	2/0
37110	1 x 95	25,9	912	1250	3/0
37111	1 x 120	28,4	1152	1650	4/0
37112	1 x 150	31,6	1440	2000	300 kcmil
37113	1 x 185	34,5	1776	2460	350 kcmil
37114	1 x 240	38,0	2304	3050	500 kcmil
37115	1 x 300	41,5	2880	3700	600 kcmil
37116	2 x 1,5	11,5	29	130	16
37117	2 x 2,5	13,4	48	190	14
37118	2 x 4	15,0	77	260	12
37119	2 x 6	18,4	115	350	10
37120	2 x 10	23,9	192	550	8
37121	2 x 16	27,6	307	900	6
37122	2 x 25	31,5	480	1300	4
37123	3 x 1,5	12,5	43	150	16
37124	3 x 2,5	14,5	72	205	14
37125	3 x 4	16,0	115	330	12
37126	3 x 6	20,0	173	470	10

Part No.	No. cores x cross-sec. $\text{mm}^2$	Outer $\varnothing$ ca. mm	Cop. weight kg/km	Weight ca. kg/km	AWG-no. *)
37127	3 x 10	25,5	288	750	8
37128	3 x 16	29,5	461	1110	6
37129	3 x 25	34,0	720	1450	4
37130	3 x 35	38,0	1008	2150	2
37131	3 x 50	44,0	1440	2800	1
37132	3 x 70	49,5	2016	3750	2/0
37133	3 x 95	54,0	2736	4590	3/0
37134	3 x 120	59,0	3456	5400	4/0
37135	4G1,5	13,4	58	190	16
37136	4G2,5	15,4	96	270	14
37137	4G4	17,9	154	380	12
37138	4G6	22,0	230	520	10
37139	4G10	28,0	384	955	8
37140	4G16	31,9	614	1400	6
37141	4G25	37,6	960	1950	4
37142	4G35	42,5	1344	2650	2
37143	4G50	48,5	1920	3600	1
37144	4G70	54,4	2688	4890	2/0
37145	4G95	60,4	3648	6180	3/0
37146	4G120	65,4	4608	7200	4/0
37147	5G1,5	15,0	72	225	16
37148	5G2,5	17,1	120	335	14
37149	5G4	19,4	192	470	12
37150	5G6	24,4	288	645	10
37151	5G10	30,5	480	1150	8
37152	5G16	35,4	768	1690	6
37153	5G25	41,3	1200	2400	4

G = with green-yellow earth core

X = without green-yellow earth core

Please note: halogen-free types available on request.

# Tauchflex-FL 750 V, blue Submersible-pump cable



## Technical data

- Special cables corresponding to DIN VDE 0250 and 0282 part 810
- **Conductor resistance** to DIN 57295/VDE 0295
- **Temperature range** –40°C to +80°C (max. temperature for the outer surface)
- Permissible **operating temperature** at conductor +90°C
- **Nominal voltage**  $U_0/U$  450/750 V
- **Operating voltage** for alternating and three-phase currents  $U_0/U$  413/825 V, for direct currents  $U_0/U$  619/1238 V
- **Current rating** to DIN 57100 part 523/VDE 0100 part 523
- **Test voltage** 15 min 2,5 kV
- Max. permitted **tensile stress** per mm<sup>2</sup> conductor 15 N
- **Minimum bending radius** flexing
  - up to 8 mm cond. ∅
  - min. 3xcond. ∅
  - above 8 mm to 12 mm cond. ∅
  - min. 4xcond. ∅
  - above 12 mm cond. ∅
  - min. 5xcond. ∅
  - fixed installation
  - up to 12 mm cond. ∅
  - min. 3xcond. ∅
  - above 12 mm cond. ∅
  - min. 4xcond. ∅

## Cable structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Foil as separator
- EPR core insulation, compound type 3GI3 to DIN VDE 0207 part 20
- Cores laying parallel
- EPR outer sheath, blue, compound type 5GM3 adapted to DIN VDE 0207 part 21
- Colour code according to DIN VDE 0293

## Advantages

- Good insulation properties when submerged in water
- Minimal weight gain under water
- The mechanical stability of the insulation materials remains constant even when submerged

## Application

Tauchflex-FL is a special cable for use as a connecting and control cable for submersible motor pumps, underwater floodlights, floating switch and has proven its worth for constant use in waste water or water for general use\* up to the depth of immersion of 500 m (50 bar) and under temperatures of up to 70°C. Tauchflex-FL can also be installed for use in dry, damp and humid areas as well as in the open air. Not suitable for the installation in hazardous areas.

### \* Note

**Not suitable for drinking water.**

**Cables for use in drinking water with BAM-certificate on request**

**(BAM = Bundesanstalt für Materialprüfung/Federal Institute for Materials Testing).**

## Features

- Installation adaptability for machinery material of protection class II
- As rotor-connection cable for motors up to 1000 V with protected fixed installation in tubes
- Temperature limit
  - in water: max. +40°C, max. +60°C with limited duration of life
  - in air: flexible –50°C to +80°C
  - stationary –30°C to +80°C

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer ∅ ca. mm x mm	Cop. weight kg / km	Weight ca. kg / km	AWG-no.¹)
37155	3 x 1,5	13 x 7	43	125	16
37156	3 x 2,5	16 x 8	72	185	14
37157	3 x 4	19 x 9	115	290	12
37158	3 x 6	23 x 10	173	400	10
37159	3 x 10	28 x 12	288	615	8
37160	3 x 16	31 x 14	461	890	6
37161	3 x 25	37 x 17	720	1155	4
37162	3 x 35	38 x 17	1008	1540	2
37163	3 x 50	45 x 20	1440	2190	1
37164	3 x 70	52 x 22	2016	2890	2/0
37165	3 x 95	58 x 25	2736	3800	3/0
37166	3 x 120	64 x 27	3456	4700	4/0

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer ∅ ca. mm x mm	Cop. weight kg / km	Weight ca. kg / km	AWG-no.¹)
37167	4G1,5	17 x 7	58	160	16
37168	4G2,5	20 x 8	96	245	14
37169	4G4	24 x 9	154	330	12
37170	4G6	26 x 10	230	450	10
37171	4G10	31 x 11	384	850	8
37172	4G16	36 x 13	614	1200	6
37173	4G25	45 x 15	960	1590	4
37174	4G35	48 x 17	1344	2085	2
37175	4G50	59 x 20	1920	2890	1

G = with green-yellow earth core  
X = without green-yellow earth core

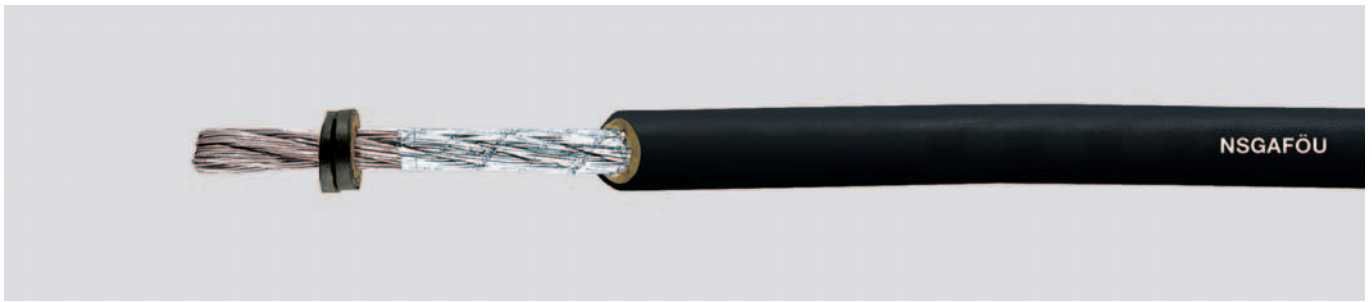
### ¹) Note

AWG sizes are approximate equivalent values.  
The actual cross-section is in mm<sup>2</sup> – see page T 15.

Please note: halogen-free types available on request.

# NSGAFÖU 3KV

Special Rubber-insulated Cable, VDE approved, short-circuit up to 1000 V



## Technical data

- Special rubber-insulated single core cables to DIN VDE 0250 part 602
- **Temperature range**  
flexing -25°C to +80°C  
fixed installation -40°C to +80°C
- Permissible **operating temperature** at conductor +90°C
- **Nominal voltage**  $U_0/U$  1,8/3 kV
- Max. permissible **operating voltage** for three and one-phase alternating current operation  $U_0/U$  2,16/3,6 kV, for direct current operation  $U_0/U$  2,7/5,4 kV
- **Test voltage** 6 kV
- **Minimum bending radius**  
approx. 5 x cable  $\varnothing$

## Cable structure

- Tinned copper, fine wire conductors, bunch stranded to DIN VDE 0295 cl. 5 and IEC 60228 cl. 5
- EPR-inner jacket, compound type 3GI3 to DIN VDE 0207 part 20
- Polychloroprene outer jacket oil resistant, abrasion resistance, black or red
- Oil resistant test to DIN VDE 0472 part 803, test method A
- Behaviour in fire:  
test according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

## Application

Particularly suitable for protection against short circuits in laying and for inherently earth-fault-proof routing in rail vehicles and omnibuses. Also suitable for laying in dry environments.

### Note

Considered as being short-circuit safe and inherently earth-fault-proof are those operating materials and conducting assemblies where because of suitable measures and/or means applied, neither a short circuit nor a short to ground is to be expected under operating conditions which are in accordance with those specified for the intended application.

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Cop. weight kg/km	Weight ca. kg/km	AWG-no.¹)
38501	1 x 1,5	5,8	14,4	62	16
38502	1 x 2,5	6,4	24,0	76	14
38503	1 x 4	7,0	38,0	95	12
38504	1 x 6	7,6	58,0	140	10
38505	1 x 10	9,1	96,0	190	8
38506	1 x 16	9,9	154,0	270	6
38507	1 x 25	12,2	240,0	410	4
38508	1 x 35	13,4	336,0	490	2

Part No.	No. cores x cross-sec. mm <sup>2</sup>	Outer $\varnothing$ ca. mm	Cop. weight kg/km	Weight ca. kg/km	AWG-no.¹)
38509	1 x 50	14,7	480,0	650	1
38510	1 x 70	16,5	672,0	900	2/0
38511	1 x 95	19,0	912,0	1200	3/0
38513	1 x 120	22,2	1152,0	1450	4/0
38514	1 x 150	24,5	1440,0	1800	300 kcmil
38512	1 x 185	25,0	1776,0	2200	350 kcmil
38515	1 x 240	36,0	2304,0	2650	500 kcmil
38516	1 x 300	38,0	2880,0	3250	600 kcmil



Modern open-work mining in Amyntho/Greece

Version in 6 kV available on request.

# H01N2-D/H01N2-E 100 V, VDE approved (NSLFFöu) Welding Cable



## Technical data

- Harmonized welding cable with rubber jacket, according to DIN VDE 0282 part 6 or HD 22.6 S2
- **Conductor resistance** according to HD 383 cl. 6
- **Conductor resistance factor** at +20°C – see Technical Informations
- **Temperature range** flexing -25°C to +80°C fixed installation -40°C to +80°C
- **Admissible working temperature** at conductor +85°C
- **Nominal voltage** 100 V
- **Test voltage** 1000 V

## Cable structure

- Plain copper conductors\*, extra fine stranded to DIN VDE 0295, BS 6360, IEC 60228 and HD 383
- Separator over conductor
- Neoprene outer jacket, chlorinated rubber compound EM5
- Outer sheath black
- Without green-yellow marking
- Test according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- Oil resistant according to VDE 0472 part 803, test method A and IEC 60540 (part 803/804)

## Application

For use between the welding generator and the hand-electrode and the work-piece.

For use in the automobile industry, in shipbuilding, in transport and conveyor systems, tool making machinery, welding robots etc.

These cables retain their high flexibility even under influence of ozone, light, oxygen, protective gases, oil and petrol. The robust construction makes these cables resistant to both to cold and the heat as well as to flames. They are suitable for use in open spaces and in dry and damp conditions.

CE = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.

### H01N2-D (NSLFFöu): Cables with standard flexibility, bending radius: approx. 12xcable Ø

Part No.	Cross-sec. mm <sup>2</sup>	Single wire Ø max. value mm	No. <sup>1)</sup> wires x	Single wire Ø mm	Sheath wall-thickness nom. value mm	Outer Ø min – max mm	Cop. weight kg / km	Weight ca. kg / km	AWG-no. <sup>2)</sup>
31001	1 x 10	0,21	320 x	0,2	2,0	7,7 – 9,7	96	135	8
31002	1 x 16	0,21	512 x	0,2	2,0	8,8 – 11,0	154	205	6
31003	1 x 25	0,21	800 x	0,2	2,0	10,1 – 12,7	240	302	4
31004	1 x 35	0,21	1120 x	0,2	2,0	11,4 – 14,2	336	420	2
31005	1 x 50	0,21	1600 x	0,2	2,2	13,2 – 16,5	480	586	1
31006	1 x 70	0,21	2240 x	0,2	2,4	15,3 – 19,2	672	798	2/0
31007	1 x 95	0,21	3024 x	0,2	2,6	17,1 – 21,4	912	1015	3/0
31008	1 x 120	0,51	614 x	0,5	2,8	19,2 – 24,0	1152	1310	4/0
31030	1 x 150	0,51	765 x	0,5	3,0	21,1 – 26,4	1440	1620	300 kcmil
31031	1 x 185	0,51	944 x	0,5	3,2	23,1 – 28,9	1776	1916	350 kcmil
31009	1 x 240	0,51	1225 x	0,5	3,4	ca. 28,0	2304	2540	500 kcmil

During the transition period (up to end of 1997) we deliver also the national version = NSLFFöu

### H01N2-E: Cables with extreme high flexibility, bending radius: approx. 10xcable Ø

Part No.	Cross-sec. mm <sup>2</sup>	Single wire Ø max. value mm	No. <sup>1)</sup> wires x	Single wire Ø mm	Sheath wall-thickness nom. value mm	Outer Ø min – max mm	Cop. weight kg / km	Weight ca. kg / km	AWG-no. <sup>2)</sup>
31032	1 x 10	0,16	566 x	0,15	1,2	6,2 – 7,8	96	119	8
31033	1 x 16	0,16	903 x	0,15	1,2	7,3 – 9,1	154	181	6
31034	1 x 25	0,16	1407 x	0,15	1,2	8,6 – 10,8	240	270	4
31035	1 x 35	0,16	1974 x	0,15	1,2	9,8 – 12,3	336	363	2
31036	1 x 50	0,16	2830 x	0,15	1,5	11,9 – 14,8	480	528	1
31037	1 x 70	0,16	3952 x	0,15	1,5	13,6 – 17,0	672	716	2/0
31038	1 x 95	0,16	5370 x	0,15	1,8	15,6 – 19,5	912	1012	3/0
31039	1 x 120	0,21	3819 x	0,20	1,8	17,2 – 21,6	1152	1090	4/0
31019	1 x 150	0,21	4788 x	0,20	1,8	18,8 – 23,5	1440	1305	300 kcmil
31020	1 x 185	0,21	5852 x	0,20	1,8	20,4 – 25,5	1776	1511	350 kcmil

The current rating are recommended for on-load period (ED) for cables in free air at an ambient temperature of +30°C.

#### Repeat cycle operation based on a 5-minute repeat period

Cross-section mm <sup>2</sup>	Permanent operation ED 100% A	Intermittent operation				
		ED 85% A	ED 60% A	ED 35% A	ED 20% A	ED 8% A
10	96	97	102	114	137	198
16	130	132	142	166	204	301
25	173	179	196	234	293	442
35	216	226	250	304	384	584
50	274	287	323	398	508	779
70	341	360	409	510	655	1011
95	413	438	502	632	816	1266
120	480	511	588	745	966	1502
150	557	594	687	875	1137	1771
185	638	683	793	1012	1319	2059

#### Repeat cycle operation based on a 10-min. repeat period

Cross-section mm <sup>2</sup>	Permanent operation ED 100% A	Intermittent operation				
		ED 85% A	ED 60% A	ED 35% A	ED 20% A	ED 8% A
10	96	96	97	102	113	152
16	130	131	133	144	167	233
25	173	175	182	204	244	351
35	216	220	233	268	324	477
50	274	281	303	356	439	654
70	341	352	387	463	578	872
95	413	430	478	582	734	1117
120	480	503	564	692	880	1348
150	557	586	661	819	1046	1609
185	638	674	765	955	1226	1892

Conversion factors for variations in ambient temperature: see page T 32

- <sup>1)</sup> Gauging value, the number of individual wires are without obligation.
- <sup>2)</sup> On request tinned conductor available.