

## H07BN4-F (6381TQ) EN 50525-2-21 Flexible Rubber Cable



### Application

Flexible rubber cable with high temperature resistance suitable for most industrial applications such as connecting equipment. The mains supply and generally for use in arduous industrial environments where good flexibility and resistance mechanical abrasion is essential.

### Standards

**EN 50525-2-21, HD22.12, EN 60228, CEI 20-19 part 12**

**Flame Retardant according to IEC/EN 60332-1-2**

### Characteristics

**Voltage Rating** U/U<sub>0</sub>  
450/750V

The use of up to 1kV in alternative current is authorised for protected static installations and for the connection of motors in lifting appliances

**Temperature Rating**

Fixed: -40°C to +90°C

Flexed: -15°C to +90°C

**Minimum Bending Radius**

Up to 25mm<sup>2</sup> - Flexed: 6 x overall diameter

Above 25mm<sup>2</sup> - Flexed: 8 x overall diameter

### Construction

**Conductor**

Class 5 flexible tinned copper conductor

**Insulation**

EPR (Ethylene Propylene Rubber)

**Sheath**

HOFR CSP (Heat and Oil Resistant and Flame Retardant Chlorosulphonated Polyethylene)

**Sheath Colour**

Black



## Dimensions

NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
1	10	1.2	10.7	200
1	16	1.2	12.1	270
1	25	1.4	14.25	380
1	35	1.4	16.1	510
1	50	1.6	18.55	680
1	70	1.6	21	930
1	95	1.8	23.4	1200
1	120	1.8	25.7	1460
1	150	2	28.3	1800
1	185	2.2	31	2200
1	240	2.4	34.5	2800
1	300	2.6	35.6	3350
1	400	2.8	42.1	4400
1	500	3	46.7	5400
1	630	3	51.3	6900

## Conductors

Class 5 Flexible Copper Conductors for Single Core and Multi-Core Cables

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	MAXIMUM DIAMETER OF WIRES IN CONDUCTOR mm	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C
		ohms/km Metal-Coated Wires
10	0.41	1.95
16	0.41	1.24
25	0.41	0.795
35	0.41	0.565
50	0.41	0.393
70	0.51	0.277
95	0.51	0.21
120	0.51	0.164
150	0.51	0.132
185	0.51	0.108
240	0.51	0.0817
300	0.51	0.0654
400	0.51	0.0495
500	0.61	0.0391
630	0.61	0.0292

The above table is in accordance with EN 60228

## Electrical Characteristics

### Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	DC OR SINGLE-PHASE AC (1 TWO CORE CABLE WITH OR WITHOUT PROTECTIVE CONDUCTOR) Amps	THREE-PHASE AC (1 THREE CORE, FOUR CORE OR FIVE CORE CABLE) Amps	SINGLE-PHASE AC OR DC (2 SINGLE CORE CABLES TOUCHING) Amps
10	76	66	-
16	103	89	-
25	136	119	-
35	-	146	200
50	-	177	250
70	-	225	310
95	-	273	369
120	-	316	432
150	-	363	497
185	-	414	564
240	-	487	673
300	-	560	773
400	-	-	924
500	-	-	1062
630	-	-	1242

Ambient temperature: 30°C  
 Conductor operating temperature: 90°C

The current ratings tabulated are for cables in free air but may also be used for cables resting on a surface. If the cable is to be wound on a drum on load the ratings should be reduced in accordance with NOTE 2 below and for cables which may be covered, NOTE 3 below.

#### 2. Flexible cables wound on reeling drums

The current ratings of cables used on reeling drums are to be reduced by the following factors:

##### a) Radial type drum

ventilated: 85%  
 unventilated: 75%

##### b) Ventilated cylindrical type drum

1	layer	of	cable	85%
2	layer	of	cable	65%
3	layer	of	cable	45%
4	layer	of	cable	35%

A radial type drum is one where spiral layers of cable are accommodated between closely spaced flanges; if fitted with solid flanges the ratings given above should be reduced and the drum is described as non-ventilated. If the flanges have suitable apertures the drum is described as ventilated. A ventilated cylindrical cable drum is one where layers of cable are accommodated between widely spaced flanges and the drum and end flanges have suitable ventilating apertures.

3. Where cable may be covered or coiled up whilst on load, or the air movement over the cable restricted, the current rating should be reduced. It is not possible to specify the amount of reduction but the table of rating factors for reeling drums can be used as a guide.

4. For 180°C cables, the rating factors for ambient temperature allow a conductor operating temperature up to 150°C. Consult the cable manufacturer for further information.

5. The temperature limits given in Table 52.1 of the 17th Edition of IEE Wiring Regulations should be taken into account when it is intended to operate these cables at maximum permissible temperature.

6. Where a conductor operates at a temperature exceeding 70°C it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512.1.2).

The above table is in accordance with Table 4F2A of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52

The Current Carrying Capacities in this appendix are based upon the following reference ambient temperatures:

For non-sheathed and sheathed cables in air, irrespective of the Installation Method: 30°C  
 For buried cables, either directly in the soil or in ducts in the ground: 20°C

The current ratings stated are based on conservative assumptions, and therefore, in some instances, may be adjusted according to the ambient installation and operating conditions.

## Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	1 TWO CORE OR 2 SINGLE CORE CABLES DC mV/A/m	SINGLE-PHASE AC (TWO CORE CABLE) mV/A/m			THREE-PHASE AC (1 THREE CORE, FOUR CORE OR FIVE CORE CABLE) mV/A/m			SINGLE-PHASE AC* (2 SINGLE CORE CABLES TOUCHING) mV/A/m		
		r	x	z	r	x	z	r	x	z
10	5.1	5.1			4.4			-		
16	3.2	3.2			2.7			-		
25	2.03	2.03	0.175	2.04	1.73	0.15	1.73	-	-	-
35	1.42	-	-	-	1.22	0.15	1.23	1.44	0.21	1.46
50	1.00	-	-	-	0.91	0.145	0.93	1.00	0.21	1.02
70	0.71	-	-	-	0.62	0.14	0.64	0.71	0.20	0.73
95	0.54	-	-	-	0.47	0.135	0.49	0.54	0.195	0.57
120	0.42	-	-	-	0.37	0.135	0.39	0.42	0.19	0.46
150	0.34	-	-	-	0.29	0.130	0.32	0.34	0.19	0.39
185	0.27	-	-	-	0.24	0.130	0.27	0.27	0.19	0.33
240	0.21	-	-	-	0.188	0.130	0.23	0.21	0.185	0.28
300	0.167	-	-	-	0.147	0.125	0.195	0.173	0.180	0.25
400	0.127	-	-	-	-	-	-	0.132	0.175	0.22
500	0.100	-	-	-	-	-	-	0.107	0.170	0.20
630	0.074	-	-	-	-	-	-	0.085	0.170	0.19

Conductor operating temperature: 90°C

r = Resistive Component  
 x = Reactive Component  
 z = Impedance Value

1. The voltage drop figures given above are based on a conductor operating temperature of 90°C and are therefore not accurate when the operating temperature is in excess of 90°C. The case of the 180°C cables with a conductor temperature of 150°C the above resistive values should be increased by a factor of 1.2.

2. \* A larger voltage drop will result if the cables are spaced.

The above table is in accordance with Table 4F2B of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52

For cables having conductors of 16mm<sup>2</sup> or less cross sectional area their inductances can be ignored and (mV/A/m)r values only are tabulated. For cables having conductors greater than 16mm<sup>2</sup>, cross sectional area the impedance values are given as (mV/A/m)z, together with the resistive component (mV/A/m)r and the reactive component (mV/A/m)x.

The above paragraph is extracted from Appendix 4 of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52

## De-Rating Factors

### 90°C Thermosetting Insulated Cables

AMBIENT TEMPERATURE	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C	85°C
DE-RATING FACTOR	0.95	0.91	0.86	0.82	0.76	0.70	0.64	0.57	0.50	0.40	0.28

The information contained within this datasheet is for guidance only and is subject to change without notice or liability. All the information is provided in good faith and is believed to be correct at the time of publication. When selecting cable accessories, please note that actual cable dimensions may vary due to manufacturing tolerances.