

## ARG7H1R 1,8/3 kV - 18/30 kV

MEDIA TENSIONE - SENZA PIOMBO  
MEDIUM VOLTAGE - LEAD-FREE



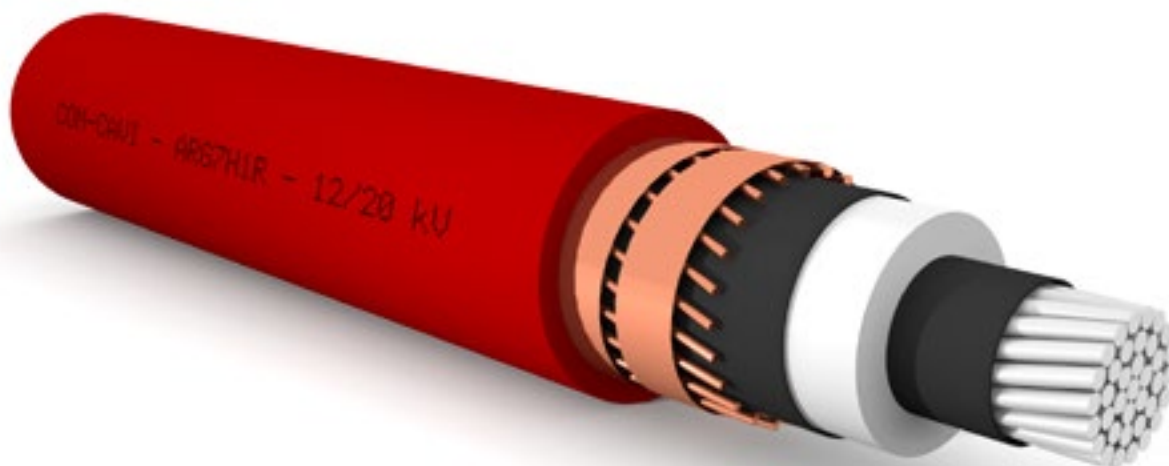
NON PROPAGANTE  
LA FIAMMA  
FLAME RETARDANT



SENZA PIOMBO  
LEAD-FREE

### RIFERIMENTO NORMATIVO/STANDARD REFERENCE

Costruzione e requisiti/Construction and specifications	IEC 60502 CEI 20-13
Misura delle scariche parziali/Measurement of partial discharges	CEI 20-16 IEC 60885-3
Propagazione fiamma/Flame propagation	CEI EN 60332-1-2
Gas corrosivi o alogenidrici/Corrosive gases or halogens	CEI EN 50267-2-1



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#### DESCRIZIONE:

Cavi unipolari isolati in gomma HEPR di qualità G7, sotto guaina di PVC

#### CARATTERISTICHE FUNZIONALI:

- Tensione nominale  $U_0/U$ : 1,8/3 ÷ 18/30 kV
- Temperatura massima di esercizio: 90°C
- Temperatura minima di esercizio: -15°C (in assenza di sollecitazioni meccaniche)
- Temperatura minima di posa: 0°C
- Temperatura massima di corto circuito: 250°C
- Raggio minimo di curvatura consigliato: 12 volte il diametro del cavo.
- Massimo sforzo di trazione consigliato: 50 N/mm<sup>2</sup> di sezione

#### CONDIZIONI DI IMPIEGO:

Adatto per il trasporto di energia tra le cabine di trasformazione e le grandi utenze. Per posa in aria libera, in tubo o canale. Ammessa la posa interrata anche non protetta, in conformità all'art. 4.3.11 della norma CEI 11-17.

#### DESCRIPTION:

Single-core cables, insulated with HEPR rubber of G7 quality, under PVC sheath.

#### FUNCTIONAL CHARACTERISTICS

- Nominal voltage  $U_0/U$ : 1,8/3 ÷ 18/30 kV
- Maximum operating temperature: 90°C
- Min. operating temperature: -15°C (without mechanical shocks)
- Minimum installation temperature: 0°C
- Maximum short circuit temperature: 250°C
- Recommended minimum bending radius: 12 times the cable diameter.
- Recommended maximum tensile stress: 50 N/mm<sup>2</sup> of the cross-section

#### USE AND INSTALLATION

Suitable for energy transmission between transformer rooms and big power users. For laying on air, into tube or open pass. Can be laid underground, also if not protected, complying with art. 4.3.11 of CEI 11-17 standard.

# ARG7H1R 1,8/3 kV - 18/30 kV

## COSTRUZIONE DEL CAVO / CABLE CONSTRUCTION



### CONDUTTORE

**Materiale:** Alluminio, formazione rigida compatta, classe 2

### CONDUCTOR

**Material:** Aluminum, compact stranded wire, class 2



### STRATO SEMICONDUCTORE

**Materiale:** Estruso (solo cavi  $U_o/U \geq 6/10$  kV)

### SEMICONDUCTOR LAYER

**Material:** Extruded (only cables  $U_o/U \geq 6/10$  kV)



### ISOLAMENTO

**Materiale:** Gomma HEPR, qualità G7, **SENZA PIOMBO** (HD 620 DHI 2)

### INSULATION

**Material:** : HEPR rubber, G7 quality, **LEAD FREE** (HD 620 DHI 2)



### STRATO SEMICONDUCTORE

**Materiale:** Estruso, pelabile a freddo (solo cavi  $U_o/U \geq 6/10$  kV)

### SEMICONDUCTOR LAYER

**Material:** Extruded, cold stripping (only cables  $U_o/U \geq 6/10$  kV)



### SCHERMO

**Tipo:** Fili di rame rosso, con nastro di rame in controspirale

### SCREEN

**Type:** Plain copper wires with helically wound copper tape



### GUAINA ESTERNA

**Materiale:** Mescola a base di PVC, qualità Rz  
**Colore:** Rosso

### OUTER SHEATH

**Material:** PVC based compound, Rz quality  
**Colour:** Red

N.B. Il cavo può essere fornito nella versione tripolare riunito ad elica visibile. In tal caso la sigla di designazione diventa ARG7H1RX seguita dalla tensione nominale di esercizio.  
N.B. The cable can be built in the three-pole version with helically wound cores. In this case, the initials becomes ARG7H1RX, followed by rated voltage.

## ARG7H1R 1,8/3 kV

### Caratteristiche tecniche/Technical characteristics **U max: 3,6 kV**

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 25	6,0	2,0	16,0	311,0	119,0	121,0	105,0	109,0
1 x 35	7,0	2,0	17,0	350,0	144,0	147,0	129,0	130,0
1 x 50	8,1	2,0	18,5	425,0	174,0	178,0	149,0	153,0
1 x 70	9,7	2,0	20,5	533,0	218,0	223,0	182,0	188,0
1 x 95	11,4	2,0	22,0	622,0	266,0	273,0	217,0	224,0
1 x 120	12,9	2,0	24,5	715,0	309,0	317,0	247,0	256,0
1 x 150	14,3	2,0	26,0	806,0	352,0	361,0	277,0	287,0
1 x 185	16,0	2,0	27,5	930,0	406,0	417,0	314,0	325,0
1 x 240	18,3	2,0	30,0	1136,0	483,0	495,0	364,0	377,0
1 x 300	21,0	2,0	32,5	1351,0	556,0	570,0	411,0	426,0
1 x 400	23,2	2,0	35,5	1670,0	651,0	667,0	471,0	487,0
1 x 500	26,1	2,0	40,0	2088,0	730,0	746,0	530,0	550,0
1 x 630	30,3	2,0	44,0	3078,0	810,0	832,0	600,0	622,0

\*Resistività termica del terreno 100°C cm/W  
 \* Ground thermal resistivity 100°C cm/W

### Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
1 x 25	1,20	0,927	0,927	0,12	0,18	0,27
1 x 35	0,868	0,669	0,668	0,11	0,17	0,30
1 x 50	0,641	0,494	0,494	0,11	0,16	0,34
1 x 70	0,443	0,342	0,342	0,10	0,16	0,40
1 x 95	0,320	0,246	0,246	0,098	0,16	0,45
1 x 120	0,253	0,196	0,196	0,095	0,15	0,50
1 x 150	0,206	0,159	0,158	0,092	0,15	0,55
1 x 185	0,164	0,128	0,127	0,089	0,15	0,60
1 x 240	0,125	0,0985	0,0974	0,086	0,14	0,68
1 x 300	0,100	0,0797	0,0781	0,084	0,14	0,75
1 x 400	0,0778	0,0638	0,0628	0,083	0,14	0,83
1 x 500	0,0605	0,0517	0,0492	0,081	0,14	0,88
1 x 630	0,0649	0,0425	0,0392	0,079	0,14	0,92

# ARG7H1R 6/10 kV

## Caratteristiche tecniche/Technical characteristics U max: 12 kV

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 35	7,0	3,4	23,0	555,0	144,0	152,0	142,0	149,0
1 x 50	8,1	3,4	24,5	630,0	174,0	183,0	168,0	177,0
1 x 70	9,7	3,4	26,5	710,0	218,0	229,0	207,0	218,0
1 x 95	11,4	3,4	28,0	830,0	266,0	280,0	247,0	260,0
1 x 120	12,9	3,4	29,3	950,0	309,0	325,0	281,0	296,0
1 x 150	14,3	3,4	31,0	1070,0	352,0	371,0	318,0	335,0
1 x 185	16,0	3,4	33,0	1220,0	406,0	427,0	361,0	380,0
1 x 240	18,3	3,4	35,6	1470,0	483,0	508,0	418,0	440,0
1 x 300	21,0	3,4	38,5	1710,0	547,0	576,0	472,0	497,0
1 x 400	23,2	3,4	41,0	2150,0	640,0	674,0	543,0	572,0
1 x 500	26,1	3,4	45,0	2570,0	740,0	779,0	621,0	654,0
1 x 630	30,3	3,4	48,0	3130,0	862,0	907,0	706,0	743,0

\*Resistività termica del terreno 100°C cm/W  
\* Ground thermal resistivity 100°C cm/W

## Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
1 x 35	0,868	0,113	0,113	0,13	0,19	0,23
1 x 50	0,641	0,822	0,822	0,12	0,18	0,26
1 x 70	0,443	0,568	0,568	0,12	0,17	0,29
1 x 95	0,320	0,411	0,411	0,11	0,17	0,32
1 x 120	0,253	0,325	0,325	0,11	0,16	0,36
1 x 150	0,206	0,265	0,265	0,10	0,16	0,38
1 x 185	0,164	0,211	0,211	0,10	0,16	0,42
1 x 240	0,125	0,161	0,161	0,097	0,16	0,47
1 x 300	0,100	0,130	0,129	0,095	0,15	0,52
1 x 400	0,0778	0,102	0,101	0,092	0,15	0,57
1 x 500	0,0605	0,0801	0,0794	0,089	0,15	0,64
1 x 630	0,0469	0,0635	0,0625	0,087	0,15	0,73

## ARG7H1R 12/20 kV

### Caratteristiche tecniche/Technical characteristics

**U max: 24 kV**

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 x 35	7,0	5,5	27,7	740,0	144,0	152,0	142,0	149,0
1 x 50	8,1	5,5	29,0	820,0	174,0	183,0	168,0	177,0
1 x 70	9,7	5,5	30,5	940,0	218,0	229,0	207,0	218,0
1 x 95	11,4	5,5	33,0	1070,0	266,0	280,0	247,0	260,0
1 x 120	12,9	5,5	34,8	1250,0	309,0	325,0	281,0	296,0
1 x 150	14,3	5,5	36,2	1350,0	352,0	371,0	318,0	335,0
1 x 185	16,0	5,5	37,6	1550,0	406,0	427,0	361,0	380,0
1 x 240	18,3	5,5	40,2	1850,0	483,0	508,0	418,0	440,0
1 x 300	21,0	5,5	43,0	2100,0	547,0	576,0	472,0	497,0
1 x 400	23,6	5,5	45,8	2500,0	640,0	674,0	543,0	572,0
1 x 500	26,5	5,5	50,0	3000,0	740,0	779,0	621,0	654,0
1 x 630	30,1	5,5	54,0	3600,0	862,0	907,0	70,6	743,0

\*Resistività termica del terreno 100°C cm/W  
\* Ground thermal resistivity 100°C cm/W

### Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
n° x mm <sup>2</sup>	Ω/Km	Ω/Km	Ω/Km	Ω/Km	Ω/Km	µF/km
1 x 35	0,868	1,113	1,113	0,14	0,20	0,17
1 x 50	0,641	0,822	0,822	0,13	0,19	0,18
1 x 70	0,443	0,568	0,568	0,13	0,19	0,21
1 x 95	0,320	0,411	0,411	0,12	0,18	0,23
1 x 120	0,253	0,325	0,325	0,12	0,18	0,25
1 x 150	0,206	0,265	0,265	0,11	0,17	0,27
1 x 185	0,164	0,211	0,211	0,11	0,17	0,29
1 x 240	0,125	0,161	0,161	0,11	0,16	0,32
1 x 300	0,100	0,130	0,129	0,10	0,16	0,35
1 x 400	0,0778	0,102	0,101	0,099	0,16	0,39
1 x 500	0,0605	0,0801	0,0794	0,096	0,15	0,43
1 x 630	0,0469	0,0635	0,0625	0,093	0,15	0,49

# ARG7H1R 18/30 kV

## Caratteristiche tecniche/Technical characteristics U max: 36 kV

Formazione Size	Ø indicativo conduttore Approx. conduct. Ø	Spessore medio isolante Average insulation thickness	Ø esterno max Max outer Ø	Peso indicativo cavo Approx. cable weight	Portata di corrente Current rating			
					A			
					in aria In air		interrato* buried*	
n° x mm <sup>2</sup>	mm	mm	mm	kg/km	a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat
1 X 35	7,0	8,0	33,5	1030,0	144,0	152,0	142,0	149,0
1 x 50	8,1	8,0	34,1	1150,0	174,0	183,0	168,0	177,0
1 x 70	9,7	8,0	36,2	1300,0	218,0	229,0	207,0	218,0
1 x 95	11,4	8,0	38,2	1450,0	266,0	280,0	247,0	260,0
1 x 120	12,9	8,0	40,0	1650,0	309,0	325,0	281,0	296,0
1 x 150	14,3	8,0	41,0	1800,0	352,0	371,0	318,0	335,0
1 x 185	16,0	8,0	43,1	2020,0	406,0	427,0	361,0	380,0
1 x 240	18,3	8,0	45,0	2300,0	483,0	508,0	418,0	440,0
1 x 300	21,0	8,0	47,0	2620,0	547,0	576,0	472,0	497,0
1 x 400	23,6	8,0	51,1	3080,0	640,0	674,0	543,0	572,0
1 x 500	26,5	8,0	53,0	3630,0	740,0	779,0	621,0	654,0
1 x 630	30,1	8,0	60,2	4250,0	862,0	907,0	706,0	743,0

\*Resistività termica del terreno 100°C cm/W

\* Ground thermal resistivity 100°C cm/W

## Caratteristiche elettriche/Electrical characteristics

Formazione Size	Resistenza elettrica a 20°C Max. electrical resistance at 20°C	Resistenza apparente a 90°C e 50Hz Conductor apparent resistance at 90°C and 50Hz		Reattanza di fase Phase reactance		Capacità a 50Hz Capacity at 50Hz
		a trifoglio trefoil	in piano flat	a trifoglio trefoil	in piano flat	
		Ω/Km	Ω/Km	Ω/Km	Ω/Km	
n° x mm <sup>2</sup>	Ω/Km	Ω/Km	Ω/Km	Ω/Km	Ω/Km	μF/km
1 X 35	0,868	1,113	1,113	0,16	0,21	0,15
1 x 50	0,641	0,822	0,822	0,15	0,20	0,15
1 x 70	0,443	0,568	0,568	0,14	0,20	0,16
1 x 95	0,320	0,411	0,411	0,13	0,19	0,18
1 x 120	0,253	0,325	0,325	0,13	0,18	0,19
1 x 150	0,206	0,265	0,265	0,12	0,18	0,20
1 x 185	0,164	0,211	0,211	0,12	0,18	0,22
1 x 240	0,125	0,161	0,161	0,11	0,17	0,24
1 x 300	0,100	0,130	0,129	0,11	0,17	0,27
1 x 400	0,0778	0,102	0,101	0,11	0,16	0,29
1 x 500	0,0605	0,0801	0,0794	0,10	0,16	0,32
1 x 630	0,0469	0,0635	0,0625	0,099	0,16	0,36