Product Overview

AMKA Low Voltage Aerial Bundled Cable is designed for low-voltage overhead power distribution networks. It consists of aluminium phase conductors insulated with weather-resistant polyethylene (PE), high-density polyethylene (HDPE), or cross-linked polyethylene (XLPE), depending on the cable type.

The insulated conductors are twisted around a supporting messenger conductor or laid up together as a self-supporting cable assembly. Depending on the design, the messenger may be bare or insulated aluminium alloy.

AMKA aerial bundled cables are available in different configurations, including AMKA, AMKA-T, AMKA-X, AMK-T and AMK-X, with options for phase conductors, street-lighting conductors and messenger construction.

Applications

AMKA aerial bundled cables are suitable for:

- Low-voltage overhead power distribution networks
- Urban and rural electricity distribution
- Overhead service connections
- Aerial distribution lines supported by messenger conductors
- Street-lighting power supply, where optional lighting conductors are included

Applicable Standards

The supplied product documentation lists the following standards:

- **SFS 2200** – Aerial Bundled Cable AMKA
- **HD 626 S1** – Overhead Distribution Cables
- **IEC 60228** – Conductors of Insulated Cables

The applicable standard depends on the selected cable construction and project requirements.

Cable Construction

1. AMKA Cable

Conductor

- 16 mm²: Round, solid aluminium conductor
- 25–120 mm²: Round, stranded and compacted aluminium conductor

Insulation

Black, UV-resistant and weather-resistant PE compound.

Cable Design

The insulated phase conductors are laid up around the messenger conductor.

★ Address: West Industrial Park, Zhulin Town, Gongyi City, Henan Province, China. ★
★ Tel:+86-371-5502-1747 Mob:+86-173-3570-4553 www.qzcablegroup.com E-mail: info@qzcablegroup.com ★

Core Identification

- Phase conductors: Identified by 2, 3 or 4 longitudinal ridges
- Optional conductors: May be supplied without ridges

Operating and Installation Temperatures

- Maximum conductor operating temperature: 70°C
- Minimum cable temperature during installation: -20°C
- Special precautions are recommended for installation below 0°C.

Mechanical and Electrical Characteristics

- UV resistance: Good
- Minimum bending radius during installation: 20 × D
- Minimum bending radius at final installation: 14 × D
- Maximum short-circuit temperature: 135°C for 5 seconds

Example of Cable Marking

AMKA 3x16+35 1 kV, followed by production number, date and time, and metre marking.

2. AMKA-T Cable

AMKA-T is an aerial bundled cable with HDPE insulation and a messenger conductor. It can include optional street-lighting conductors.

Phase Conductors

Round, stranded and compacted aluminium conductors.

Street-Lighting Conductors

A maximum of two optional conductors may be included:

- 16 mm²: Round, solid or round, stranded and compacted aluminium conductor
- 25 mm²: Round, stranded and compacted aluminium conductor

Messenger

Available in two constructions:

- Bare, round, stranded and compacted aluminium alloy conductor
- Insulated, round, stranded and uncompacted aluminium alloy conductor

Insulation

Extruded black, weather-resistant HDPE.

★ Address: West Industrial Park, Zhulin Town, Gongyi City, Henan Province, China. ★
★ Tel:+86-371-5502-1747 Mob:+86-173-3570-4553 www.qzcablegroup.com E-mail: info@qzcablegroup.com ★

Cable Design

The cable consists of one, two or three insulated phase conductors and one or two optional insulated street-lighting conductors stranded around a bare or insulated messenger.

Other Characteristics

- Direction of lay: Right-hand lay (Z)
- Core identification: Longitudinal ridges
- Origin marking: Embossed on the phase conductor insulation, identifying the manufacturer, year of manufacture and insulation material

Key Advantage

The hardness of HDPE insulation provides good protection against mechanical damage.

3. AMKA-X Cable

AMKA-X features XLPE insulation for aerial bundled low-voltage distribution applications.

Phase Conductors

Round, stranded and compacted aluminium conductors.

Street-Lighting Conductors

A maximum of two optional conductors may be included:

- 16 mm^2: Round, solid or round, stranded and compacted aluminium conductor
- 25 mm^2: Round, stranded and compacted aluminium conductor

Messenger

Available in two constructions:

- Bare, round, stranded and compacted aluminium alloy conductor
- Insulated, round, stranded and uncompacted aluminium alloy conductor

Insulation

Extruded black, weather-resistant XLPE.

Cable Design

The cable consists of one, two or three insulated phase conductors and one or two optional insulated street-lighting conductors stranded around a bare or insulated messenger.

Other Characteristics

★ Address: West Industrial Park, Zhulin Town, Gongyi City, Henan Province, China. ★
★ Tel:+86-371-5502-1747 Mob:+86-173-3570-4553 www.qzcablegroup.com E-mail: info@qzcablegroup.com ★

- Direction of lay: Right-hand lay (Z)
- Core identification: Longitudinal ridges
- Origin marking: Embossed on the phase conductor insulation, identifying the manufacturer, year of manufacture and insulation material

Key Advantage

XLPE insulation provides enhanced thermal performance and supports higher current-carrying capacity compared with the HDPE-insulated design, subject to the applicable cable rating and installation conditions.

4. AMK-T Cable

AMK-T is a twisted low-voltage aerial cable consisting of insulated aluminium conductors laid up together.

Conductor

Round, stranded and compacted aluminium conductor.

Insulation

Extruded black, weather-resistant HDPE.

Cable Design

The insulated conductors are stranded together.

Other Characteristics

- Direction of lay: Right-hand lay (Z)
- Core identification: Longitudinal ridges
- Origin marking: Embossed on the conductor insulation, identifying the manufacturer, year of manufacture and insulation material

Key Advantage

The hardness of HDPE insulation provides good protection against mechanical damage.

5. AMK-X Cable

AMK-X is an XLPE-insulated twisted aerial cable designed for low-voltage overhead distribution.

Conductor

Round, stranded and compacted aluminium conductor.

Insulation

Extruded black, weather-resistant XLPE.

★ Address: West Industrial Park, Zhulin Town, Gongyi City, Henan Province, China. ★
★ Tel:+86-371-5502-1747 Mob:+86-173-3570-4553 www.qzcablegroup.com E-mail: info@qzcablegroup.com ★

Cable Design

The insulated conductors are stranded together.

Key Characteristics

- Core identification: Longitudinal ridges
- Origin marking: Embossed on the conductor insulation, identifying the manufacturer, year of manufacture and insulation material
- XLPE insulation supports higher current-carrying capacity, subject to the applicable cable rating and installation conditions

Technical Data

AMKA Cable – Dimensional and Weight Data

Product Name	Diameter over Bare Conductor (mm)	Diameter over Messenger (mm)	Effective Diameter in Wind (mm)	Conductor Weight (kg/km)	Cable Weight (kg/km)
AMKA 1x16+25	4.4	5.8	11	100	135
AMKA 3x16+25	4.4	5.8	20	185	270
AMKA 3x25+35	5.8	6.8	23	285	390
AMKA 3x35+50	6.8	8.0	27	390	530
AMKA 3x50+70	8.0	9.6	31	540	700
AMKA 3x70+95	9.6	11.3	36	775	1,000
AMKA 3x120+95	12.7	11.3	42	1,185	1,500

Effective diameter in wind = circumference divided by π.

AMKA-T – Technical Data for Typical Constructions

★ Address: West Industrial Park, Zhulin Town, Gongyi City, Henan Province, China. ★
★ Tel:+86-371-5502-1747 Mob:+86-173-3570-4553 www.qzcablegroup.com E-mail: info@qzcablegroup.com ★

Technical Data	1x16+16	3x16+25	3x25+25	3x35+25	3x50+35	3x70+50	3x95+70	3x120+70	3x150+70
Phase conductor diameter, approx. (mm)	4.7	4.7	5.8	6.8	8.0	9.6	11.3	12.7	14.1
Insulated phase conductor diameter, approx. (mm)	6.7	6.7	7.8	8.8	10.4	12.4	14.1	15.9	17.7
Messenger diameter, approx. (mm)	4.7/5.1	5.8/6.3	5.8/6.3	5.8/6.3	6.8/7.5	8.0/8.7	9.6/10.4	9.6/10.4	9.6/10.4
Insulated messenger diameter, approx. (mm)	-/7.1	-/8.3	-/8.3	-/8.3	-/9.5	-/11.1	-/13.2	-/13.2	-/13.2
Overall cable diameter, approx. (mm)	12/15	20/23	23/25	25/27	29/31	34/37	39/43	43/46	46/50
Complete cable weight, approx. (kg/km)	105/130	250/275	340/370	430/455	590/625	840/890	1,150/1,250	1,400/1,500	1,700/1,750
Minimum messenger breaking load (kN)	4.7	7.4	7.4	7.4	10.3	14.2	20.6	20.6	20.6
Conductor DC resistance at +20°C (Ω/km)	1.91	1.91	1.20	0.868	0.641	0.443	0.320	0.253	0.206
Messenger DC resistance at +20°C (Ω/km)	2.20	1.38	1.38	1.38	0.986	0.720	0.493	0.493	0.493
Thermal short-circuit current capacity for 1 s (kA)	1.1	1.1	1.7	1.7	2.3	3.4	4.7	4.7	4.7

For messenger diameter, insulated messenger diameter, overall cable diameter and cable weight, paired values are reproduced in the same order as supplied in the source data.

AMKA-X – Technical Data for Typical Constructions

★ Address: West Industrial Park, Zhulin Town, Gongyi City, Henan Province, China. ★
★ Tel:+86-371-5502-1747 Mob:+86-173-3570-4553 www.qzcablegroup.com E-mail: info@qzcablegroup.com ★

Technical Data	1x16+16	3x16+25	3x25+25	3x35+25	3x50+35	3x70+50	3x95+70	3x120+70	3x150+70
Phase conductor diameter, approx. (mm)	4.7	4.7	5.8	6.8	8.0	9.6	11.3	12.7	14.1
Insulated phase conductor diameter, approx. (mm)	7.3	7.3	8.4	9.4	11.0	12.6	14.7	16.1	17.5
Messenger diameter, approx. (mm)	4.7/5.1	5.8/6.3	5.8/6.3	5.8/6.3	6.8/7.5	8.0/8.7	9.6/10.4	9.6/10.4	9.6/10.4
Insulated messenger diameter, approx. (mm)	-/7.7	-/8.9	-/8.9	-/8.9	-/10.1	-/11.7	-/13.4	-/13.4	-/13.4
Overall cable diameter, approx. (mm)	13/16	22/25	24/27	26/29	30/33	34/38	40/44	43/47	46/50
Complete cable weight, approx. (kg/km)	110/140	265/300	360/395	450/485	620/660	850/910	1,200/1,250	1,450/1,500	1,700/1,750
Minimum messenger breaking load (kN)	4.7	7.4	7.4	7.4	10.3	14.2	20.6	20.6	20.6
Conductor DC resistance at +20°C (Ω/km)	1.91	1.91	1.20	0.868	0.641	0.443	0.320	0.253	0.206
Messenger DC resistance at +20°C (Ω/km)	2.20	1.38	1.38	1.38	0.986	0.720	0.493	0.493	0.493
Thermal short-circuit current capacity for 1 s (kA)	1.3	1.5	2.0	2.0	2.8	4.0	5.6	5.6	5.6

For messenger diameter, insulated messenger diameter, overall cable diameter and cable weight, paired values are reproduced in the same order as supplied in the source data.

AMK-T – Technical Data for Typical Constructions

Technical Data	2x16	4x16	4x25	4x35	4x50	4x70	4x95	4x120	4x150
Conductor diameter, approx. (mm)	4.7	4.7	6.1	6.8	8.2	9.6	11.9	12.7	14.1
Insulated conductor diameter, approx. (mm)	6.7	6.7	8.1	8.8	10.6	12.4	14.6	15.9	17.7
Overall cable diameter, approx. (mm)	15	18	21	23	27	31	37	40	44
Complete cable weight, approx. (kg/km)	125	250	380	480	675	945	1,300	1,650	2,050
Minimum breaking load of single core (kN)	2.6	2.6	4.2	5.6	7.4	10.3	14.0	17.6	22.0
Minimum breaking load of complete cable (kN)	5.2	10.4	16.8	22.4	29.6	41.2	56.0	70.4	88.0
Conductor DC resistance at +20°C (Ω/km)	1.91	1.91	1.20	0.868	0.641	0.443	0.320	0.253	0.206

★ Address: West Industrial Park, Zhulin Town, Gongyi City, Henan Province, China. ★
★ Tel:+86-371-5502-1747 Mob:+86-173-3570-4553 www.qzcablegroup.com E-mail: info@qzcablegroup.com ★

Thermal short-circuit current capacity for 1 s (kA)	1.1	1.1	1.8	2.5	3.6	5.0	6.8	8.5	10.7

AMK-X – Technical Data for Typical Constructions

Technical Data	2x16	4x16	4x25	4x35	4x50	4x70	4x95	4x120	4x150
Conductor diameter, approx. (mm)	4.7	4.7	6.1	6.8	8.2	9.6	11.9	12.7	14.1
Insulated conductor diameter, approx. (mm)	7.3	7.3	8.7	9.4	11.2	12.6	15.3	16.1	17.5
Overall cable diameter, approx. (mm)	16	19	22	24	28	32	38	40	44
Complete cable weight, approx. (kg/km)	140	275	405	510	715	960	1,350	1,650	2,000
Minimum breaking load of single core (kN)	2.6	2.6	4.2	5.6	7.4	10.3	14.0	17.6	22.0
Minimum breaking load of complete cable (kN)	5.2	10.4	16.8	22.4	29.6	41.2	56.0	70.4	88.0
Conductor DC resistance at +20°C (Ω/km)	1.91	1.91	1.20	0.868	0.641	0.443	0.320	0.253	0.206
Thermal short-circuit current capacity for 1 s (kA)	1.1	1.1	1.8	2.5	3.6	5.0	6.8	8.5	10.7

Manufacturing and Customization

AMKA aerial bundled cables can be specified according to project requirements, including:

- Aluminium conductor cross-sectional area
- Number of phase conductors
- Optional street-lighting conductors
- PE, HDPE or XLPE insulation, according to the selected design
- Bare or insulated messenger conductor, where applicable
- Cable dimensions and technical requirements

For project enquiries, please provide the required cable type, conductor configuration, applicable standard and quantity for technical evaluation and quotation.

Frequently Asked Questions About AMKA Aerial Bundled Cable

1. What is AMKA aerial bundled cable?

AMKA is a low-voltage aerial bundled cable designed for overhead power distribution. It uses aluminium phase conductors with weather-resistant insulation and a supporting messenger conductor.

2. What is the difference between AMKA, AMKA-T and AMKA-X?

The AMKA construction uses insulated conductors laid around a messenger and PE insulation. AMKA-T uses HDPE insulation, while AMKA-X uses XLPE insulation. The AMKA-T and AMKA-X designs also provide options for additional street-lighting conductors and different messenger constructions.

3. What is the difference between AMK-T and AMK-X?

AMK-T uses black, weather-resistant HDPE insulation, while AMK-X uses black, weather-resistant XLPE insulation. Both are twisted aerial cable constructions with aluminium conductors.

★ Address: West Industrial Park, Zhulin Town, Gongyi City, Henan Province, China. ★
★ Tel:+86-371-5502-1747 Mob:+86-173-3570-4553 www.qzcablegroup.com E-mail: info@qzcablegroup.com ★

4. What conductor material is used in AMKA cable?

The phase conductors are aluminium. Depending on the selected design and cross-sectional area, they may be solid or stranded and compacted. Messenger conductors in AMKA-T and AMKA-X can be aluminium alloy in bare or insulated construction.

5. What insulation materials are available?

The product information includes PE, HDPE and XLPE insulation. The exact material depends on the cable series and construction.

6. Can AMKA cable include street-lighting conductors?

Yes. AMKA-T and AMKA-X designs can include up to two optional insulated street-lighting conductors, depending on the selected configuration.

7. What is the maximum operating temperature of AMKA cable?

The supplied AMKA product data specifies a maximum operating temperature of 70°C. Separate operating-temperature ratings for AMKA-T, AMKA-X, AMK-T and AMK-X are not stated in the supplied technical information.

8. What is the maximum short-circuit temperature of AMKA cable?

The AMKA product description specifies a maximum short-circuit temperature of 135°C for 5 seconds. The technical tables for the other cable series provide short-circuit current capacity for 1 second.

9. Which standards are listed for AMKA aerial bundled cable?

The supplied documentation lists SFS 2200, HD 626 S1 and IEC 60228. The applicable standards should be confirmed against the required cable construction and project specification.

10. What sizes are available?

The supplied technical tables include AMKA configurations from 1x16+25 to 3x120+95, AMKA-T and AMKA-X configurations from 1x16+16 to 3x150+70, and AMK-T and AMK-X configurations from 2x16 to 4x150.

11. Can AMKA cable be customized?

Cable configurations can be evaluated according to project requirements, including conductor size, number of phase conductors, optional lighting conductors, insulation material and messenger construction. Technical specifications or project drawings can be submitted for review.

★ Address: West Industrial Park, Zhulin Town, Gongyi City, Henan Province, China. ★
★ Tel:+86-371-5502-1747 Mob:+86-173-3570-4553 www.qzcablegroup.com E-mail: info@qzcablegroup.com ★