

## ZTT GROUP

Established in 1992, ZTT started from optical fiber communications and was listed on Shanghai Stock Exchange (SSE) in 2002 (Stock Code in SSE: 600522). ZTT has pictured a diversified industrial portfolio for marine equipment, renewable energy, new materials, smart grid, optical communications and other diversified industrial products. ZTT Group is now hosting 80 subsidiary companies and over 16,000 employees, operating 5 overseas plants located in India, Brazil, Indonesia, Morocco and Turkey. ZTT owns more than 2500 patents with independent intellectual property rights, presided over or participated in more than 500 international and national industry standards. The products of ZTT are exported to 160 countries and regions. The company has ranked among the top 500 Chinese enterprises for consecutive years and broke through \$ 12.5 billion in sales revenue in 2021. ZTT follows the new economic model of fostering cleaner production and accelerating green and low-carbon development, works hard to serve as the pioneer of persistent endeavor to achieve national goal involving carbon dioxide emissions peaking by 2030 and carbon neutrality by 2060, emerging as a green manufacturing technology group assuming regional economy.



## Up-rating Conductors





# *Your Partner in Cable*

ZTT is specialized in research, development, production, marketing, service and support of conductors for overhead transmission lines.

ZTT has the first-class equipments and quality management system. Our typical references include up to  $\pm 1100\text{kV}$  and span length reach to 2746m in China. "Customer First", "Quality", and "Innovation" drive us to be successful in the market.

With more than 70 years' experiences, ZTT can provide not only conventional conductor but also up-rating conductor. For conventional conductors, the products include: ACSR, AAAC, AAC and so on. And for up-rating conductors, the products include: GAP Type Conductor, INVAR Core Conductor, TACSR and ACSS. We have supplied each kind of conductors with 400,000 tons for 500kV line as yet and have exported about 450,000 tons to the world.

ZTT will consistently serve the telecommunication and power grid industry relying on its sales & services network all over the world.



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## INVAR Conductor-TACIR and ZTACIR

Super thermal-resistant aluminum-alloy conductors,  
Aluminum-clad invar reinforced

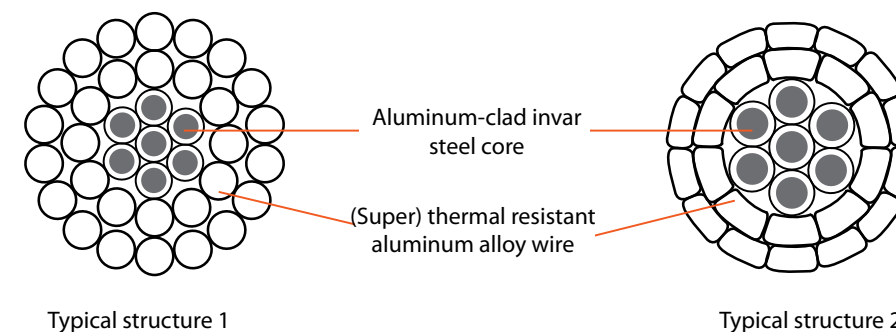
### Definition

• INVAR conductor is composed of aluminum-clad invar core and thermal-resistant aluminum alloy wires. This conductor is suitable for old line modification. It can keep the same sag while increasing capacity.

### Standard

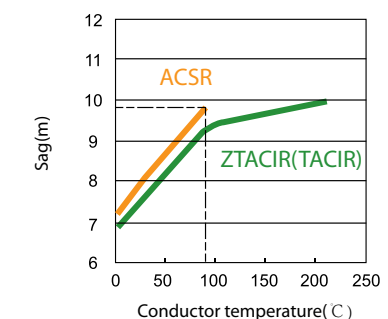
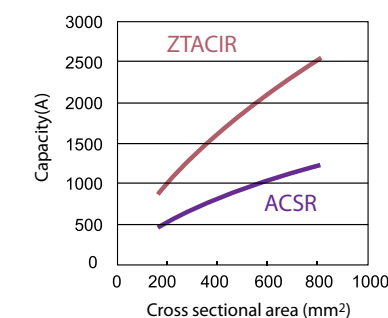
IEC 62004  
IEC 61089  
JCS 1404  
Q/320623 AP 25

### Structure



### Technical characteristics

- The current-carrying capacity of INVAR conductor in 210°C is more than twice that of ACSR with same area in 90°C.
- The sag of INVAR conductor is kept in the same with that of ACSR with same overall diameter.
- The aluminum-clad invar has good performance of resistance to electrochemical corrosion, and the working life of conductor can reach more than 40 years.



## Invar Conductor-TACIR and ZTACIR

### Typical Parameters (Round structure)

| Code   | Structure |        | Areas           | Diameter | Breaking load | DC resistance at 20°C | Weight | Current capacity |        |
|--------|-----------|--------|-----------------|----------|---------------|-----------------------|--------|------------------|--------|
|        | Al        | Steel  |                 |          |               |                       |        | TACIR            | ZTACIR |
|        | Nos./mm   |        | mm <sup>2</sup> | mm       | kN            | Ω/km                  | Kg/km  | A                |        |
| 135/30 | 30/2.38   | 7/2.38 | 164.61          | 16.66    | 53.97         | 0.2117                | 600    | 698              | 866    |
| 160/35 | 30/2.60   | 7/2.60 | 196.44          | 18.20    | 64.41         | 0.1774                | 716    | 784              | 974    |
| 210/40 | 28/3.07   | 7/2.7  | 207.26          | 20.38    | 73.78         | 0.1386                | 870    | 910              | 1135   |
| 200/45 | 30/2.90   | 7/2.90 | 244.39          | 20.30    | 78.81         | 0.1441                | 891    | 910              | 1135   |
| 230/45 | 28/3.24   | 7/2.85 | 275.51          | 21.51    | 82.19         | 0.1245                | 969    | 986              | 1231   |
| 255/40 | 26/3.54   | 7/2.75 | 297.48          | 22.41    | 82.83         | 0.1116                | 1015   | 1055             | 1318   |
| 240/55 | 30/3.20   | 7/3.20 | 297.57          | 22.40    | 93.82         | 0.1171                | 1085   | 1030             | 1165   |
| 220/55 | 30/3.05   | 7/3.05 | 270.33          | 21.35    | 85.23         | 0.1303                | 985    | 962              | 1088   |
| 290/55 | 28/3.64   | 7/3.20 | 347.67          | 24.16    | 101.53        | 0.0976                | 1226   | 1155             | 1447   |
| 300/50 | 26/3.85   | 7/3.00 | 352.16          | 24.40    | 95.55         | 0.0944                | 1203   | 1179             | 1476   |
| 340/65 | 28/3.92   | 7/3.45 | 403.36          | 26.03    | 117.90        | 0.0842                | 1423   | 1274             | 1599   |
| 345/55 | 26/4.11   | 7/3.20 | 401.24          | 26.04    | 108.80        | 0.0828                | 1370   | 1285             | 1612   |

Note:  
 1. Ambient temperature 40°C, Wind velocity 0.5m/s, Wind direction: 0 Degree, Solar radiation 0.1w/cm<sup>2</sup>, Absorptivity of conductor surface 0.9.  
 2. Continuous operating temperature: TACIR 150°C, ZTACIR 210°C.  
 3. Other designs according to customers' requirements.

### Typical Parameters (Trapezoid structure)

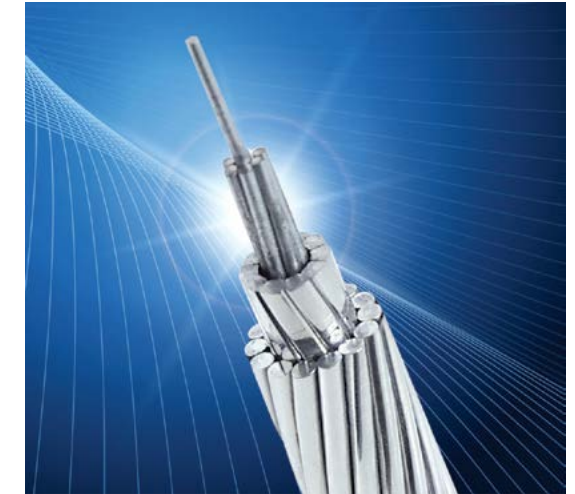
| Code   | Structure |        | Areas           | Diameter | Breaking load | DC resistance at 20°C | Weight | Current capacity |        |
|--------|-----------|--------|-----------------|----------|---------------|-----------------------|--------|------------------|--------|
|        | Al        | Steel  |                 |          |               |                       |        | TACIR            | ZTACIR |
|        | Nos./mm   |        | mm <sup>2</sup> | mm       | kN            | Ω/km                  | Kg/km  | A                |        |
| 160/40 | 18/3.37   | 7/2.65 | 199.16          | 17.04    | 65.06         | 0.1759                | 730    | 771              | 957    |
| 200/45 | 17/3.87   | 7/2.85 | 244.62          | 18.87    | 76.87         | 0.1412                | 883    | 890              | 1105   |
| 200/50 | 17/3.87   | 7/2.95 | 247.81          | 19.01    | 80.39         | 0.1409                | 906    | 892              | 1110   |
| 250/45 | 18/4.20   | 7/2.85 | 294.04          | 20.64    | 82.64         | 0.1141                | 1019   | 1017             | 1268   |
| 250/40 | 18/4.13   | 7/2.75 | 290.96          | 20.51    | 81.12         | 0.1143                | 996    | 1014             | 1264   |
| 240/55 | 18/4.13   | 7/3.20 | 297.43          | 20.82    | 93.12         | 0.1169                | 1083   | 1007             | 1138   |
| 240/50 | 18/4.71   | 7/3.00 | 290.62          | 20.55    | 88.13         | 0.1157                | 1032   | 1000             | 1131   |
| 315/55 | 18/4.71   | 7/3.20 | 396.92          | 23.15    | 104.06        | 0.0907                | 1266   | 1182             | 1479   |
| 315/50 | 18/4.71   | 7/3.00 | 363.10          | 22.91    | 97.20         | 0.0910                | 1232   | 1176             | 1471   |
| 330/60 | 18/4.81   | 7/3.30 | 386.95          | 23.68    | 109.70        | 0.0869                | 1329   | 1216             | 1522   |
| 350/55 | 20/4.71   | 7/3.20 | 404.77          | 24.19    | 109.33        | 0.0819                | 1379   | 1262             | 1580   |

Note:  
 1. Ambient temperature 40°C, Wind velocity 0.5m/s, Wind direction: 0 Degree, Solar radiation 0.1w/cm<sup>2</sup>, Absorptivity of conductor surface 0.9.  
 2. Continuous operating temperature: TACIR 150°C, ZTACIR 210°C.  
 3. Other designs according to customers' requirements.

## GAP Type Conductor-GTACSR and GZTACSR

### Definition

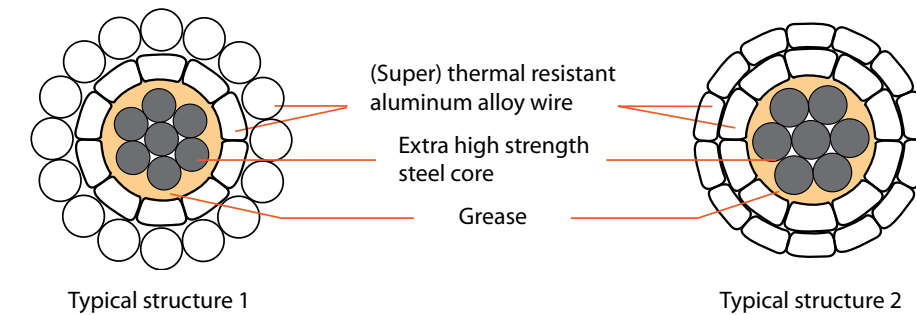
• GAP type conductor is composed of layers of thermal resistant aluminum alloy wires around a high strength steel core. Grease is filled in the Gap to make the steel core move freely, which giving the conductor its special characteristics.



### Standard

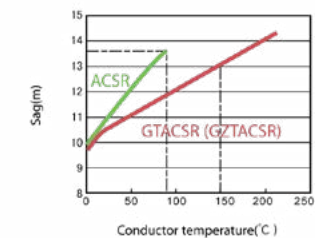
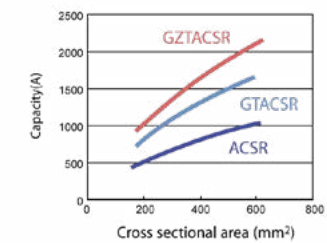
Q 320623 AP 35  
 IEC 61089  
 IEC 62420  
 IEC 62219

### Structure



### Technical characteristics

- Capacity expansion characteristics
  - The current-carrying capacity of GAP type conductor in 150°C is 1.6 times that of ACSR with same area in 90°C.
  - The current-carrying capacity of GAP type conductor in 210°C is twice that of ACSR with same area in 90°C.
- Sag characteristics
  - Limiting the sag increase with rising in temperature by stress transfer above knee-point.



# GAP Type Conductor-GTACSR and GZTACSR

## Typical Parameters

| Code   | Areas                 |       | Diameter          |                   | Breaking load<br>kN | DC resistance<br>at 20 °C<br>Ω/km | Weight<br>Kg/km | Current capacity |         |
|--------|-----------------------|-------|-------------------|-------------------|---------------------|-----------------------------------|-----------------|------------------|---------|
|        | Al<br>mm <sup>2</sup> | Steel | Structure 1<br>mm | Structure 2<br>mm |                     |                                   |                 | GTACSR           | GZTACSR |
| 185/30 | 197.60                | 31.67 | 19.7              | 18.7              | 81.1                | 0.1483                            | 801             | 879              | 1095    |
| 240/30 | 250.60                | 31.67 | 20.6              | 20.6              | 89.7                | 0.1170                            | 948             | 1017             | 1270    |
| 260/40 | 265.30                | 43.11 | 22.6              | 21.7              | 109.3               | 0.1106                            | 1084            | 1068             | 1335    |
| 300/40 | 290.20                | 43.11 | 23.7              | 22.4              | 113.2               | 0.1010                            | 1147            | 1124             | 1406    |
| 370/40 | 370.50                | 40.08 | 26.0              | 24.8              | 121.0               | 0.0792                            | 1348            | 1316             | 1651    |
| 400/50 | 408.30                | 49.48 | 27.5              | 26.1              | 141.6               | 0.0718                            | 1523            | 1403             | 1762    |
| 450/50 | 444.71                | 49.48 | 28.4              | 27.2              | 147.4               | 0.0660                            | 1644            | 1484             | 1867    |
| 500/60 | 523.50                | 63.55 | 31.2              | 29.5              | 183.3               | 0.0560                            | 1951            | 1655             | 2087    |
| 630/50 | 642.70                | 52.83 | 34.0              | 32.0              | 186.0               | 0.0456                            | 2195            | 1887             | 2386    |

Note:  
 1. Ambient temperature 40 °C, Wind velocity 0.5m/s, Wind direction: 0 Degree, Solar radiation 0.1w/cm<sup>2</sup>, Absorptivity of conductor surface 0.9.  
 2. Continuous operating temperature: GTACSR 150 °C, GZTACR 210 °C.  
 3. Other designs according to customers' requirements.

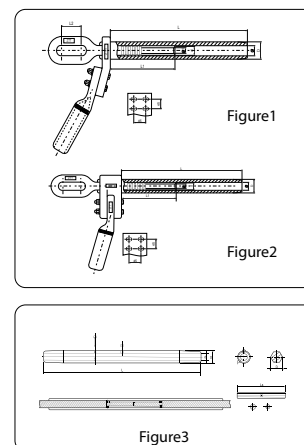
## Accessory Fittings

### ■ Compacted Suspension Clamp

| Type     | Conductor Diameter<br>(mm) | Dimensions (mm) |         |       |       |       |           |       | Figure No. |
|----------|----------------------------|-----------------|---------|-------|-------|-------|-----------|-------|------------|
|          |                            | L               | L1      | L2    | D     | Φ     | Φ1        | d     |            |
| NY-185JX | 19.7                       | 400-520         | 150-250 | 50-60 | 30-38 | 20-21 | 7.5-8.0   | 15-16 | 1          |
| NY-240JX | 20.6                       | 500-600         | 150-250 | 50-60 | 35-42 | 21-23 | 7.5-8.0   | 15-16 | 1          |
| NY-260JX | 22.6                       | 500-600         | 150-250 | 50-60 | 35-42 | 23-25 | 8.0-8.5   | 16-18 | 1          |
| NY-300JX | 23.7                       | 500-600         | 150-250 | 50-60 | 35-42 | 25-27 | 8.0-8.5   | 16-18 | 1          |
| NY-370JX | 26.0                       | 550-650         | 150-250 | 60-80 | 38-50 | 27-28 | 8.0-8.5   | 16-18 | 1          |
| NY-400JX | 27.5                       | 550-650         | 150-250 | 60-80 | 38-50 | 28-30 | 8.0-9.8   | 19-20 | 1          |
| NY-450JX | 28.4                       | 550-650         | 150-250 | 60-80 | 45-50 | 29-30 | 9.5-10.0  | 19-20 | 2          |
| NY-500JX | 31.2                       | 600-700         | 150-250 | 60-80 | 48-55 | 32-33 | 10.0-10.5 | 20-22 | 2          |
| NY-630JX | 34.2                       | 600-700         | 150-250 | 60-80 | 50-58 | 34-36 | 9.5-10.0  | 18-20 | 2          |

## Accessory Fittings

| Type     | Conductor Diameter<br>(mm) | Dimensions (mm) |       |          |         |       |           |
|----------|----------------------------|-----------------|-------|----------|---------|-------|-----------|
|          |                            | L               | L1    | L2       | D       | Φ     | Φ1        |
| JY-185JX | 19.7                       | 30-38           | 15-16 | 550-650  | 140-160 | 15-16 | 7.5-8.0   |
| JY-240JX | 20.6                       | 35-42           | 15-16 | 600-700  | 160-200 | 15-16 | 7.5-8.0   |
| JY-260JX | 22.6                       | 35-42           | 16-18 | 600-700  | 160-200 | 16-18 | 7.5-8.0   |
| JY-300JX | 23.7                       | 35-42           | 16-18 | 600-700  | 160-200 | 16-18 | 7.5-8.0   |
| JY-370JX | 26.0                       | 38-50           | 16-18 | 700-800  | 200-220 | 16-18 | 8.0-8.5   |
| JY-400JX | 27.5                       | 38-50           | 19-20 | 700-800  | 200-220 | 18-20 | 8.0-9.8   |
| JY-450JX | 28.4                       | 45-50           | 19-20 | 700-800  | 200-220 | 18-20 | 9.5-10.0  |
| JY-500JX | 31.2                       | 48-55           | 20-22 | 800-950  | 220-260 | 20-22 | 10.0-10.5 |
| JY-630JX | 34.2                       | 50-58           | 19-20 | 850-1000 | 220-240 | 18-20 | 9.5-10.0  |



# Aluminum Conductor Steel Supported-ACSS and ACSS/TW

## Definition

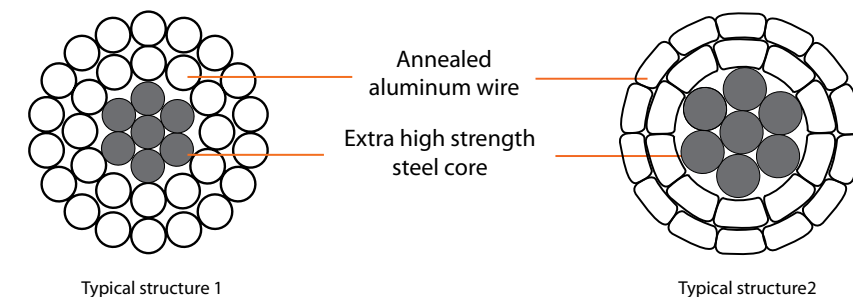
• ACSS conductor is composed of steel core and annealed aluminum wires. The conductivity of annealed aluminum wire is up to 63% IACS, which is in favor to capacity expansion and energy conservation.

## Standard

Q320623 AP 32  
 IEC 61089  
 IEC 62219  
 ASTM B609  
 ASTM B851  
 ASTM B856  
 ASTM B857

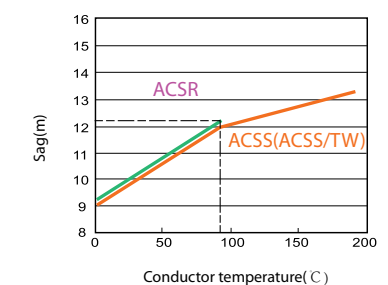
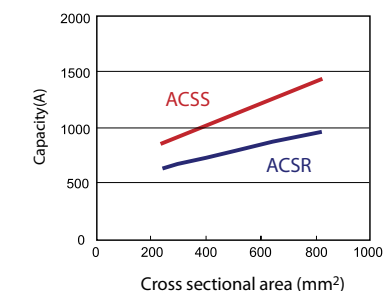


## Structure



## Technical characteristics

- Saving energy characteristic
  - The conductivity of the annealed aluminum wire is 63% IACS, and the conductivity of the hard drawing aluminum wire is 61% IACS. So the annealed aluminum wire can save about 2% energy. In the same transmission condition, the loss can reduce about 3%.
- Up-rating Characteristic
  - The current-carrying capacity of ACSS conductor in 150 °C is 1.5 times that of ACSR with same area in 90 °C.





# Aluminum Conductor Steel Supported-ACSS

## Typical Parameters

| Code   | Structure |        | Areas<br>mm <sup>2</sup> | Diameter<br>mm | Breaking load<br>kN | DC resistance at 20 °C<br>Ω/km | Weight<br>Kg/km | Current capacity in 150 °C<br>A |
|--------|-----------|--------|--------------------------|----------------|---------------------|--------------------------------|-----------------|---------------------------------|
|        | Al        | Steel  |                          |                |                     |                                |                 |                                 |
|        | Nos./mm   |        |                          |                |                     |                                |                 |                                 |
| 150/25 | 15/3.52   | 7/2.06 | 169.30                   | 15.65          | 49.7                | 0.1915                         | 585             | 718                             |
| 185/30 | 20/3.45   | 7/2.33 | 216.81                   | 17.71          | 63.6                | 0.1495                         | 749             | 844                             |
| 210/35 | 20/3.67   | 7/2.48 | 245.38                   | 18.84          | 72.0                | 0.1321                         | 848             | 916                             |
| 240/40 | 20/3.94   | 7/2.66 | 282.74                   | 20.22          | 82.9                | 0.1146                         | 977             | 1005                            |
| 250/40 | 26/3.50   | 7/2.70 | 290.23                   | 20.49          | 85.3                | 0.1118                         | 1004            | 1022                            |
| 300/40 | 26/3.87   | 7/2.70 | 345.91                   | 22.33          | 88.6                | 0.09141                        | 1158            | 1161                            |
| 300/50 | 26/3.83   | 7/2.96 | 347.71                   | 22.42          | 102.5               | 0.09333                        | 1203            | 1151                            |
| 350/55 | 20/4.72   | 7/3.20 | 406.25                   | 24.24          | 119.8               | 0.07988                        | 1406            | 1275                            |
| 400/45 | 24/4.55   | 7/2.80 | 433.33                   | 24.96          | 98.8                | 0.07160                        | 1413            | 1358                            |
| 400/50 | 21/4.94   | 7/3.08 | 454.65                   | 25.60          | 115.5               | 0.06943                        | 1520            | 1391                            |
| 400/65 | 23/4.72   | 7/3.42 | 466.74                   | 25.98          | 137.0               | 0.06946                        | 1613            | 1397                            |
| 500/50 | 36/4.19   | 7/3.00 | 545.87                   | 27.99          | 116.2               | 0.05657                        | 1763            | 1584                            |
| 500/65 | 36/4.20   | 7/3.44 | 563.82                   | 28.50          | 143.9               | 0.05638                        | 1894            | 1597                            |
| 630/65 | 36/4.76   | 7/3.44 | 705.69                   | 31.83          | 152.1               | 0.04383                        | 2285            | 1873                            |

Note:  
 1. Ambient temperature 40 °C, Wind velocity 0.5m/s, Wind direction: 0 Degree, Solar radiation 0.1w/cm<sup>2</sup>, Absorptivity of conductor surface 0.9.  
 2. Other designs according to customers' requirements.  
 3. We also can design according to the ASTM B856, ASTM B857.

## Accessory Fittings

### Compacted Suspension Clamp

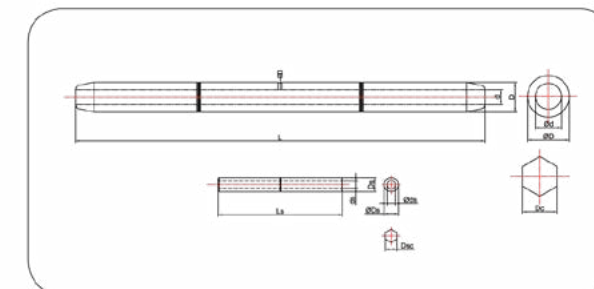
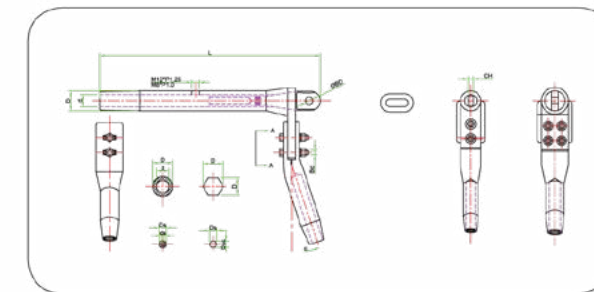
| Type           | Suitable for Conductor Type | Dimension (mm) |    |       |    |    |    |       |     |         |
|----------------|-----------------------------|----------------|----|-------|----|----|----|-------|-----|---------|
|                |                             | L              | D  | d     | CH | BD | Ds | Dsc   | Bd  | Bolt No |
| NY-150/25N(RL) | ACSS-150/25                 | 400            | 34 | 17.50 | 19 | 16 | 18 | 15.60 | M16 | 2       |
| NY-185/30N(RL) | ACSS-185/30                 | 430            | 38 | 19.50 | 19 | 16 | 18 | 15.60 | M16 | 2       |
| NY-210/35N(RL) | ACSS-210/35                 | 440            | 40 | 20.60 | 19 | 16 | 18 | 15.60 | M16 | 2       |
| NY-240/40N(RL) | ACSS-240/40                 | 450            | 42 | 22.00 | 19 | 18 | 18 | 15.60 | M16 | 2       |
| NY-250/40N(RL) | ACSS-250/40                 | 460            | 42 | 22.30 | 19 | 18 | 20 | 17.33 | M16 | 2       |
| NY-300/40N(RL) | ACSS-300/40                 | 470            | 45 | 24.40 | 19 | 18 | 20 | 17.33 | M16 | 2       |
| NY-300/50N(RL) | ACSS-300/50                 | 480            | 45 | 24.40 | 22 | 22 | 20 | 17.33 | M16 | 2       |
| NY-350/55N(RL) | ACSS-350/55                 | 500            | 50 | 26.00 | 22 | 22 | 22 | 19.07 | M16 | 2       |
| NY-400/45N(RL) | ACSS-400/45                 | 510            | 48 | 27.00 | 22 | 22 | 20 | 17.33 | M16 | 4       |
| NY-400/50N(RL) | ACSS-400/50                 | 520            | 50 | 27.50 | 22 | 22 | 22 | 19.07 | M16 | 4       |
| NY-400/65N(RL) | ACSS-400/65                 | 580            | 50 | 28.00 | 22 | 24 | 24 | 20.80 | M16 | 4       |
| NY-500/50N(RL) | ACSS-500/50                 | 540            | 55 | 30.50 | 22 | 22 | 22 | 19.07 | M16 | 4       |
| NY-500/65N(RL) | ACSS-500/65                 | 600            | 55 | 31.00 | 22 | 24 | 24 | 20.80 | M20 | 4       |
| NY-630/65N(RL) | ACSS-630/65                 | 680            | 60 | 34.50 | 22 | 24 | 24 | 20.80 | M20 | 4       |

# Aluminum Conductor Steel Supported-ACSS

### Compacted Connected Sleeve

| Type           | Suitable for Conductor Type | Dimension (mm) |    |       |     |    |       |
|----------------|-----------------------------|----------------|----|-------|-----|----|-------|
|                |                             | L              | D  | d     | CH  | BD | Ds    |
| JY-150/25N(RL) | ACSS-150/25                 | 580            | 34 | 17.50 | 180 | 18 | 6.78  |
| JY-185/30N(RL) | ACSS-185/30                 | 580            | 38 | 19.50 | 180 | 18 | 7.59  |
| JY-210/35N(RL) | ACSS-210/35                 | 600            | 40 | 20.60 | 200 | 18 | 8.04  |
| JY-240/40N(RL) | ACSS-240/40                 | 600            | 42 | 22.00 | 200 | 18 | 8.58  |
| JY-250/40N(RL) | ACSS-250/40                 | 600            | 42 | 22.30 | 200 | 20 | 8.70  |
| JY-300/40N(RL) | ACSS-300/40                 | 600            | 45 | 24.40 | 200 | 20 | 8.70  |
| JY-300/50N(RL) | ACSS-300/50                 | 660            | 45 | 24.40 | 240 | 20 | 9.48  |
| JY-350/55N(RL) | ACSS-350/55                 | 660            | 50 | 26.00 | 240 | 22 | 10.20 |
| JY-400/45N(RL) | ACSS-400/45                 | 660            | 48 | 27.00 | 220 | 20 | 9.00  |
| JY-400/50N(RL) | ACSS-400/50                 | 740            | 50 | 27.50 | 240 | 22 | 9.81  |
| JY-400/65N(RL) | ACSS-400/65                 | 880            | 50 | 28.00 | 260 | 24 | 10.86 |
| JY-500/50N(RL) | ACSS-500/50                 | 740            | 55 | 30.50 | 240 | 22 | 9.60  |
| JY-500/65N(RL) | ACSS-500/65                 | 930            | 55 | 31.00 | 280 | 24 | 11.02 |
| JY-630/65N(RL) | ACSS-630/65                 | 930            | 60 | 34.50 | 280 | 24 | 11.02 |

### Compacted Connected Sleeve



## Aluminum Conductor Steel Supported-ACSS(ASTM B856)

| Code Name | Stranding | Cross section (MCM) | Diameter (mm) |       | Mass (kg/km) | Outside Diameter (mm) | Rated strength (kN)<br>(by type of steel core) |                    |         |
|-----------|-----------|---------------------|---------------|-------|--------------|-----------------------|--|--------------------|---------|
|           |           |                     | Al            | Steel |              |                       | ACSS/HS<br>ACSS/MS                             | ACSS/GA<br>ACSS/MA | ACSS/AW |
| Thrasher  | 76/19     | 2 312               | 4.43          | 2.07  | 3754         | 45.77                 | 169.5  | 158.3              | 151.7   |
| Kiwi      | 72/7      | 2 167               | 4.41          | 2.94  | 3424         | 44.07                 | 137.0  | 129.0              | 125.4   |
| Bluebird  | 84/19     | 2 156               | 4.07          | 2.44  | 3732         | 44.75                 | 202.4  | 187.3              | 181.0   |
| Chukar    | 84/19     | 1 780               | 3.70          | 2.22  | 3083         | 40.69                 | 169.9  | 157.5              | 149.5   |
| Falcon    | 54/19     | 1 590               | 4.36          | 2.62  | 3038         | 39.24                 | 207.3  | 189.5              | 182.8   |
| Lapwing   | 45/7      | 1 590               | 4.78          | 3.18  | 2664         | 38.20                 | 131.7  | 124.1              | 120.1   |
| Parrot    | 54/19     | 1 510               | 4.25          | 2.55  | 2884         | 38.23                 | 196.6  | 179.7              | 173.0   |
| Nuthatch  | 45/7      | 1 510               | 4.65          | 3.10  | 2530         | 37.24                 | 125.0  | 117.9              | 114.3   |
| Plover    | 54/19     | 1 431               | 4.14          | 2.48  | 2735         | 37.21                 | 186.4  | 170.8              | 164.1   |
| Bobolink  | 45/7      | 1 431               | 4.53          | 3.02  | 2397         | 36.25                 | 120.1  | 111.6              | 108.1   |
| Martin    | 54/19     | 1 351               | 4.02          | 2.41  | 2582         | 36.17                 | 176.1  | 161.0              | 155.2   |
| Dipper    | 45/7      | 1 351               | 4.40          | 2.93  | 2263         | 35.20                 | 113.4  | 105.4              | 102.3   |
| Pheasant  | 54/19     | 1 272               | 3.90          | 2.34  | 2431         | 35.10                 | 165.9  | 151.7              | 145.9   |
| Bittern   | 45/7      | 1 272               | 4.27          | 2.85  | 2131         | 34.16                 | 106.8  | 99.2               | 96.1    |
| Grackle   | 54/19     | 1 192.5             | 3.77          | 2.27  | 2278         | 33.99                 | 157.9  | 145.0              | 137.0   |
| Bunting   | 45/7      | 1 192.5             | 4.14          | 2.76  | 1997         | 33.07                 | 104.5  | 95.2               | 92.5    |
| Finch     | 54/19     | 1 113               | 3.65          | 2.19  | 2128         | 32.84                 | 147.7  | 135.2              | 128.1   |
| Bluejay   | 45/7      | 1 113               | 4.00          | 2.66  | 1866         | 31.98                 | 93.9   | 86.7               | 84.1    |
| Curlew    | 54/7      | 1 033.5             | 3.51          | 3.51  | 1978         | 31.62                 | 134.8  | 125.4              | 116.1   |
| Ortolan   | 45/7      | 1 033.5             | 3.85          | 2.57  | 1731         | 30.78                 | 86.7   | 80.5               | 78.3    |
| Cardinal  | 54/7      | 954                 | 3.38          | 3.38  | 1826         | 30.38                 | 124.5  | 115.6              | 109.4   |
| Rail      | 45/7      | 954                 | 3.70          | 2.47  | 1598         | 29.59                 | 80.1   | 74.3               | 72.1    |
| Canary    | 54/7      | 900                 | 3.28          | 3.28  | 1723         | 29.51                 | 117.4  | 109.4              | 103.2   |
| Ruddy     | 45/7      | 900                 | 3.59          | 2.40  | 1507         | 28.73                 | 75.6   | 70.3               | 68.1    |
| Mallard   | 30/19     | 795                 | 4.14          | 2.48  | 1836         | 28.96                 | 168.6  | 152.6              | 146.3   |
| Condor    | 54/7      | 795                 | 3.08          | 3.08  | 1521         | 27.74                 | 103.6  | 96.5               | 93.0    |
| Tern      | 45/7      | 795                 | 3.38          | 2.25  | 1332         | 27.00                 | 67.6   | 63.2               | 60.0    |
| Drake     | 26/7      | 795                 | 4.44          | 3.45  | 1626         | 28.14                 | 124.5  | 115.2              | 108.5   |
| Cuckoo    | 24/7      | 795                 | 4.62          | 3.08  | 1522         | 27.74                 | 103.6  | 96.5               | 93.0    |
| Redwing   | 30/19     | 715                 | 3.92          | 2.35  | 1651         | 27.46                 | 151.2  | 137.0              | 131.2   |
| Starling  | 26/7      | 715.5               | 4.21          | 3.28  | 1464         | 26.70                 | 112.1  | 103.6              | 97.9    |
| Stilt     | 24/7      | 715.5               | 4.39          | 2.92  | 1370         | 26.31                 | 94.7   | 86.7               | 83.6    |
| Gannet    | 26/7      | 666.6               | 4.07          | 3.16  | 1363         | 25.76                 | 104.1  | 96.5               | 93.0    |
| Flamingo  | 24/7      | 666.6               | 4.23          | 2.82  | 1277         | 25.40                 | 88.5   | 81.0               | 77.8    |
| Egret     | 30/19     | 636                 | 3.70          | 2.22  | 1469         | 25.88                 | 137.4  | 124.5              | 117.0   |
| Scoter    | 30/7      | 636                 | 3.70          | 3.70  | 1481         | 25.88                 | 132.1  | 121.9              | 111.6   |
| Grosbeak  | 26/7      | 636                 | 3.97          | 3.09  | 1301         | 25.15                 | 99.6   | 92.1               | 88.5    |
| Rook      | 24/7      | 636                 | 4.14          | 2.76  | 1217         | 24.82                 | 84.5   | 77.0               | 74.3    |
| Teal      | 30/19     | 605                 | 3.61          | 2.16  | 1397         | 25.25                 | 130.3  | 118.3              | 111.2   |
| Wood Duck | 30/7      | 605                 | 3.61          | 3.61  | 1408         | 25.25                 | 125.9  | 115.6              | 108.5   |
| Squab     | 26/7      | 605                 | 3.87          | 3.01  | 1237         | 24.54                 | 94.7   | 87.6               | 84.5    |
| Peacock   | 24/7      | 605                 | 4.03          | 2.69  | 1159         | 24.21                 | 80.5   | 73.4               | 70.7    |
| Eagle     | 30/7      | 556.5               | 3.46          | 3.46  | 1296         | 24.21                 | 117.9  | 109.0              | 101.9   |
| Dove      | 26/7      | 556.5               | 3.72          | 2.89  | 1139         | 23.55                 | 88.5   | 81.0               | 77.8    |
| Parakeet  | 24/7      | 556.5               | 3.87          | 2.58  | 1066         | 23.22                 | 73.8   | 67.6               | 64.9    |
| Hen       | 30/7      | 477                 | 3.20          | 3.20  | 1111         | 22.43                 | 101.0  | 93.4               | 89.4    |
| Hawk      | 26/7      | 477                 | 3.44          | 2.67  | 975          | 21.79                 | 76.1   | 69.4               | 66.3    |

## Aluminum Conductor Steel Supported-ACSS (ASTM B856) & ACSS/TW (ASTM B857)

|           |       |       |      |      |      |       |       |       |       |
|-----------|-------|-------|------|------|------|-------|-------|-------|-------|
| Flicker   | 24/7  | 477   | 3.58 | 2.39 | 913  | 21.49 | 63.2  | 57.8  | 55.6  |
| Lark      | 30/7  | 397.5 | 2.92 | 2.92 | 925  | 20.47 | 85.8  | 77.8  | 74.3  |
| Ibis      | 26/7  | 397.5 | 3.14 | 2.44 | 812  | 19.89 | 63.2  | 57.8  | 55.2  |
| Brant     | 24/7  | 397.5 | 3.27 | 2.18 | 761  | 19.61 | 53.8  | 48.9  | 46.3  |
| Oriole    | 30/7  | 336.4 | 2.69 | 2.69 | 783  | 18.82 | 72.5  | 65.8  | 63.2  |
| Linnet    | 26/7  | 336.4 | 2.89 | 2.25 | 687  | 18.29 | 54.7  | 49.8  | 46.7  |
| Ostrich   | 26/7  | 300   | 2.73 | 2.12 | 613  | 17.27 | 48.5  | 44.5  | 41.8  |
| Partridge | 26/7  | 266.8 | 2.57 | 2.00 | 546  | 16.31 | 43.3  | 39.5  | 37.2  |
| Cochin    | 12/7  | 211.3 | 3.37 | 3.37 | 784  | 16.87 | 102.7 | 94.3  | 87.6  |
| Brahma    | 16/19 | 203.2 | 2.86 | 2.48 | 1004 | 18.14 | 151.7 | 135.7 | 129.4 |
| Dorking   | 12/7  | 190.8 | 3.20 | 3.20 | 708  | 16.03 | 93.0  | 85.0  | 81.4  |

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2. Typical Parameters for ACSS (ASTM standard requirement).

| Code Name   | Stranding | Cross section (MCM) | Diameter (mm) |       | Mass (kg/km) | Outside Diameter (mm) | Rated strength (kN) |
|-------------|-----------|---------------------|---------------|-------|--------------|-----------------------|---------------------|
|             |           |                     | Al            | Steel |              |                       | ACSS/HS/TW          |
| Flicker     | 18/7      | 477.0               |               | 2.39  | 910.7        | 19.81                 | 21.1                |
| Hawk        | 18/7      | 477.0               |               | 2.67  | 974.6        | 20.07                 | 25.4                |
| Parakeet    | 18/7      | 556.5               |               | 2.58  | 1062.4       | 21.34                 | 24.7                |
| Dove        | 20/7      | 556.5               |               | 2.89  | 1136.8       | 21.59                 | 29.6                |
| Rook        | 18/7      | 636.0               |               | 2.76  | 1217.2       | 22.61                 | 28.3                |
| Grosbeak    | 20/7      | 636.0               |               | 3.09  | 1299.0       | 23.11                 | 33.3                |
| Tern        | 17/7      | 795.0               |               | 2.25  | 1325.8       | 24.38                 | 22.6                |
| Puffin      | 18/7      | 795.0               |               | 2.81  | 1449.3       | 24.89                 | 30.7                |
| Condor      | 20/7      | 795.0               |               | 3.08  | 1517.8       | 25.15                 | 34.7                |
| Drake       | 20/7      | 795.0               |               | 3.45  | 1623.4       | 25.65                 | 41.7                |
| Phoenix     | 30/7      | 954.0               |               | 2.13  | 1529.7       | 26.67                 | 22.6                |
| Rail        | 32/7      | 954.0               |               | 2.47  | 1598.1       | 26.92                 | 26.8                |
| Cardinal    | 20/7      | 954.0               |               | 3.38  | 1825.8       | 27.43                 | 41.7                |
| Snowbird    | 30/7      | 1033.5              |               | 2.21  | 1657.6       | 27.69                 | 24.4                |
| Ortolan     | 32/7      | 1033.5              |               | 2.57  | 1730.5       | 27.94                 | 29.0                |
| Curlew      | 21/7      | 1033.5              |               | 3.51  | 1973.1       | 28.70                 | 45.1                |
| Avocet      | 30/7      | 1113.0              |               | 2.30  | 1784.1       | 28.70                 | 26.0                |
| Bluejay     | 33/7      | 1113.0              |               | 2.66  | 1864.5       | 28.96                 | 31.2                |
| Finch       | 38/7      | 1113.0              |               | 2.19  | 2123.4       | 30.23                 | 49.4                |
| Oxbird      | 30/7      | 1192.5              |               | 2.38  | 1912.1       | 29.72                 | 27.8                |
| Bunting     | 33/7      | 1192.5              |               | 2.76  | 1996.9       | 29.97                 | 33.5                |
| Grackle     | 38/19     | 1192.5              |               | 2.27  | 2275.2       | 30.99                 | 52.8                |
| Scissortail | 30/7      | 1272.0              |               | 2.46  | 2040.0       | 30.48                 | 29.8                |
| Bittern     | 35/7      | 1272.0              |               | 2.85  | 2130.8       | 30.99                 | 35.7                |
| Pheasant    | 39/19     | 1272.0              |               | 2.34  | 2425.4       | 32.00                 | 55.5                |
| Dipper      | 35/7      | 1351.5              |               | 2.93  | 2263.2       | 32.00                 | 37.9                |
| Martin      | 39/19     | 1351.5              |               | 2.41  | 2577.2       | 33.02                 | 58.9                |
| Bobolink    | 36/7      | 1431.0              |               | 3.02  | 2397.2       | 32.77                 | 40.2                |
| Plover      | 39/19     | 1431.0              |               | 2.48  | 2729.0       | 34.04                 | 62.3                |
| Lapwing     | 36/7      | 1590.0              |               | 3.18  | 2663.5       | 34.54                 | 44.0                |
| Falcon      | 42/19     | 1590.0              |               | 2.62  | 3032.5       | 35.81                 | 69.3                |
| Chukar      | 37/19     | 1780.0              |               | 2.22  | 3066.8       | 36.83                 | 56.8                |
| Bluebird    | 64/19     | 2156.0              |               | 2.44  | 3737.9       | 40.89                 | 67.7                |

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2. Typical Parameters for ACSS/TW (ASTM standard requirement).

## Aluminum Conductor Steel Supported-ACSS(ASTM B857)

| Code Name | Stranding | Cross section (MCM) | Diameter (mm) | Mass (kg/km) | Outside Diameter (mm) | Rated strength(kN) |
|-----------|-----------|---------------------|---------------|--------------|-----------------------|--------------------|
|           | Al/Steel  |                     | Steel         |              |                       | ACSS/HS/TW         |
| Flicker   | 18/7      | 477.0               | 2.39          | 911          | 19.81                 | 63.1               |
| Hawk      | 18/7      | 477.0               | 2.67          | 975          | 20.07                 | 76.0               |
| Parakeet  | 18/7      | 556.5               | 2.58          | 1063         | 21.34                 | 73.8               |
| Dove      | 20/7      | 556.5               | 2.89          | 1137         | 21.59                 | 88.5               |
| Rook      | 18/7      | 636.0               | 2.76          | 1217         | 22.61                 | 84.5               |
| Grosbeak  | 20/7      | 636.0               | 3.09          | 1299         | 23.11                 | 99.6               |
| Tern      | 17/7      | 795.0               | 2.25          | 1326         | 24.38                 | 67.6               |
| Puffin    | 18/7      | 795.0               | 2.81          | 1449         | 24.89                 | 91.6               |
| Condor    | 20/7      | 795.0               | 3.08          | 1518         | 25.15                 | 103.6              |
| Drake     | 20/7      | 795.0               | 3.45          | 1624         | 25.65                 | 124.5              |
| Phoenix   | 30/7      | 954.0               | 2.13          | 1530         | 26.67                 | 67.6               |
| Rail      | 32/7      | 954.0               | 2.47          | 1598         | 26.92                 | 80.0               |
| Cardinal  | 20/7      | 954.0               | 3.38          | 1826         | 27.43                 | 124.5              |
| Snowbird  | 30/7      | 1033.5              | 2.21          | 1658         | 27.69                 | 72.9               |
| Ortolan   | 32/7      | 1033.5              | 2.57          | 1731         | 27.94                 | 86.7               |
| Curlew    | 21/7      | 1033.5              | 3.51          | 1973         | 28.70                 | 134.7              |

|             |       |        |      |      |       |       |
|-------------|-------|--------|------|------|-------|-------|
| Avocet      | 30/7  | 1113.0 | 2.30 | 1784 | 28.70 | 77.8  |
| Bluejay     | 33/7  | 1113.0 | 2.66 | 1865 | 28.96 | 93.3  |
| Finch       | 38/7  | 1113.0 | 2.19 | 2124 | 30.23 | 147.6 |
| Oxbird      | 30/7  | 1192.5 | 2.38 | 1912 | 29.72 | 83.1  |
| Bunting     | 33/7  | 1192.5 | 2.76 | 1997 | 29.97 | 100.0 |
| Grackle     | 38/19 | 1192.5 | 2.27 | 2275 | 30.99 | 157.8 |
| Scissortail | 30/7  | 1272.0 | 2.46 | 2040 | 30.48 | 88.9  |
| Bittern     | 35/7  | 1272.0 | 2.85 | 2131 | 30.99 | 106.7 |
| Pheasant    | 39/19 | 1272.0 | 2.34 | 2426 | 32.00 | 165.8 |
| Dipper      | 35/7  | 1351.5 | 2.93 | 2263 | 32.00 | 113.3 |
| Martin      | 39/19 | 1351.5 | 2.41 | 2577 | 33.02 | 176.0 |
| Bobolink    | 36/7  | 1431.0 | 3.02 | 2397 | 32.77 | 120.0 |
| Plover      | 39/19 | 1431.0 | 2.48 | 2729 | 34.04 | 186.2 |
| Lapwing     | 36/7  | 1590.0 | 3.18 | 2664 | 34.54 | 131.6 |
| Falcon      | 42/19 | 1590.0 | 2.62 | 3033 | 35.81 | 207.1 |
| Chukar      | 37/19 | 1780.0 | 2.22 | 3067 | 36.83 | 169.8 |
| Bluebird    | 64/19 | 2156.0 | 2.44 | 3738 | 40.89 | 202.2 |

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2. Typical Parameters for ACSS/TW (ASTM standard requirement)



## Thermal Resistant Conductor-TACSR/AW

### Definition

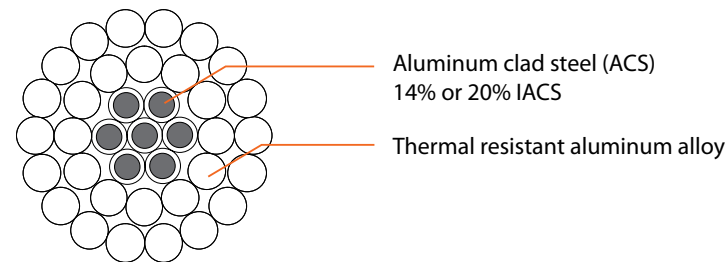
TACSR/AW conductor is composed of aluminum-clad steel core and thermal-resistant aluminum alloy wires, which is of simple structure, convenient construction and maintenance, low cost and large capacity.

### Standard

IEC 61232  
IEC 60024  
IEC 61089



### Structure



### Technical characteristics

- Big conveying capacity:
  - The current-carrying capacity of TACSR/AW conductor in 150 °C is 1.5 times that of ACSR with same area in 90 °C.
- Long working life:
  - The aluminum clad steel has good performance of resistance to electrochemical corrosion, and the working life of conductor can reach more than 40 years.

## Thermal Resistant Conductor-TACSR/AW

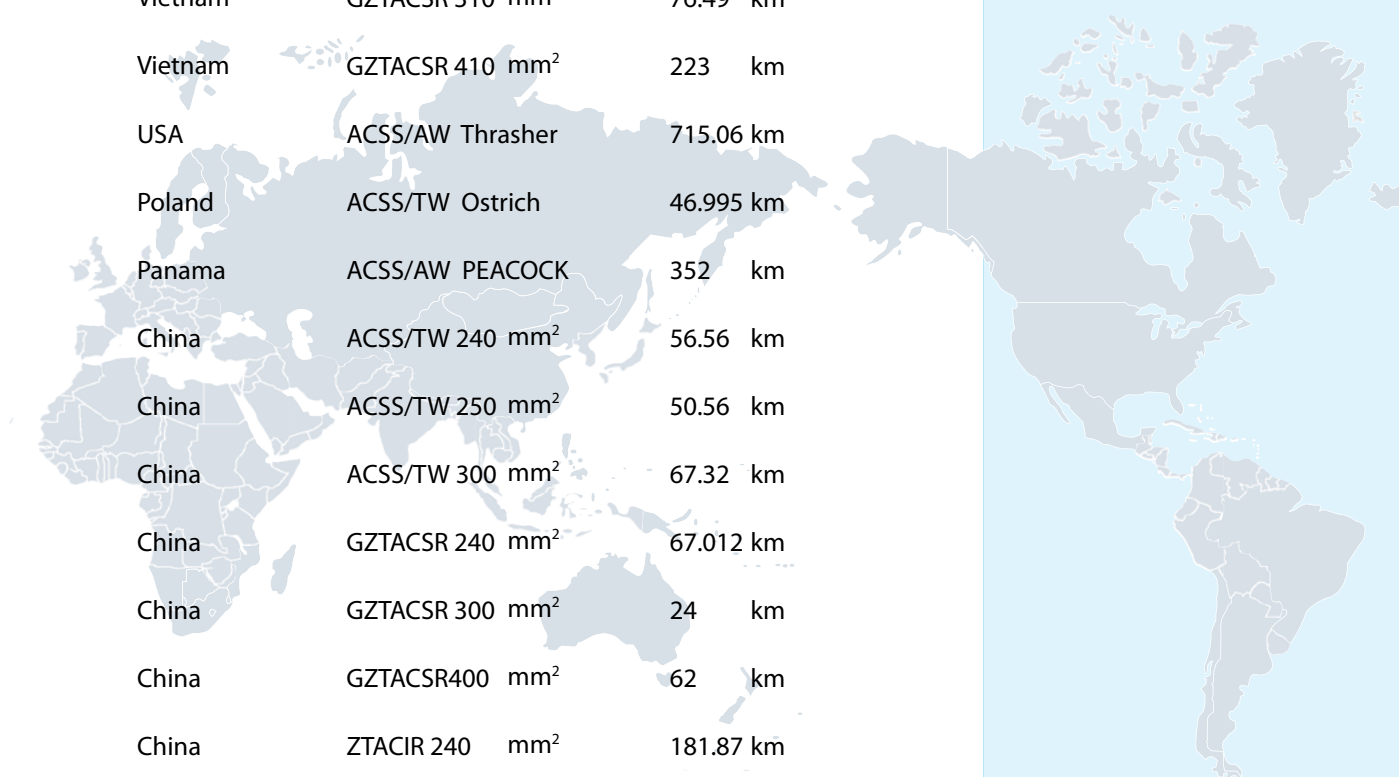
| Code     | Structure         |         | Outside Diameter | Weight      |             | Rated tensile strength |             | DC resistance at 20 °C |             | Capacity at 150 °C |             |
|----------|-------------------|---------|------------------|-------------|-------------|------------------------|-------------|------------------------|-------------|--------------------|-------------|
|          | Nos.Diameter (mm) |         |                  | 14%IACS ACS | 20%IACS ACS | 14%IACS ACS            | 20%IACS ACS | 14%IACS ACS            | 20%IACS ACS | 14%IACS ACS        | 20%IACS ACS |
|          | Al                | ACS     | mm               | kg/km       |             | kN                     |             | Ω/km                   |             | A                  |             |
| 50/8     | 6/3.20            | 1/3.20  | 9.60             | 189.80      | 185.42      | 18.91                  | 17.46       | 0.5817                 | 0.5718      | 356                | 359         |
| 70/10    | 6/3.80            | 1/3.80  | 11.40            | 267.70      | 261.47      | 26.22                  | 23.50       | 0.4125                 | 0.4055      | 449                | 446         |
| 70/40    | 12/2.72           | 7/2.72  | 13.60            | 484.20      | 461.77      | 68.92                  | 60.38       | 0.3698                 | 0.3506      | 510                | 496         |
| 95/20    | 7/4.16            | 7/1.85  | 13.87            | 396.40      | 386.00      | 42.42                  | 37.71       | 0.2934                 | 0.2876      | 566                | 561         |
| 95/55    | 12/3.20           | 7/3.20  | 16.00            | 670.20      | 639.12      | 97.27                  | 83.19       | 0.2672                 | 0.2533      | 630                | 614         |
| 120/7    | 18/2.90           | 1/2.90  | 14.50            | 374.70      | 371.00      | 29.06                  | 27.67       | 0.2431                 | 0.2417      | 626                | 624         |
| 120/25   | 7/4.72            | 7/2.10  | 15.74            | 510.50      | 497.06      | 54.64                  | 48.58       | 0.2278                 | 0.2234      | 668                | 661         |
| 120/70   | 12/3.60           | 7/3.60  | 18.00            | 848.40      | 808.89      | 115.27                 | 101.02      | 0.2110                 | 0.2002      | 736                | 716         |
| 150/8    | 18/3.20           | 1/3.20  | 16.00            | 456.20      | 451.73      | 34.55                  | 33.11       | 0.1996                 | 0.1985      | 712                | 710         |
| 150/20   | 24/2.78           | 7/1.85  | 16.67            | 537.50      | 526.49      | 51.51                  | 46.80       | 0.1953                 | 0.1928      | 732                | 727         |
| 185/10   | 18/3.60           | 1/3.60  | 18.00            | 577.30      | 571.73      | 43.32                  | 41.28       | 0.1578                 | 0.1569      | 831                | 828         |
| 185/25   | 24/3.15           | 7/2.10  | 18.90            | 689.9       | 676.54      | 65.46                  | 59.39       | 0.1522                 | 0.1502      | 862                | 856         |
| 185/30   | 26/2.98           | 7/2.32  | 18.88            | 712.80      | 696.60      | 72.28                  | 64.88       | 0.1559                 | 0.1533      | 853                | 846         |
| 210/10   | 18/3.80           | 1/3.80  | 19.00            | 643.10      | 637.02      | 48.26                  | 45.54       | 0.1416                 | 0.1408      | 892                | 889         |
| 210/25   | 24/3.33           | 7/2.22  | 19.98            | 771.00      | 756.06      | 73.15                  | 66.38       | 0.1362                 | 0.1344      | 928                | 921         |
| 210/35   | 26/3.22           | 7/2.50  | 20.38            | 830.90      | 812.08      | 82.74                  | 75.53       | 0.1335                 | 0.1314      | 944                | 936         |
| 210/50   | 30/2.98           | 7/2.98  | 20.86            | 928.20      | 901.31      | 102.73                 | 92.47       | 0.1330                 | 0.1300      | 956                | 945         |
| 240/30   | 24/3.60           | 7/2.40  | 21.60            | 901.20      | 883.64      | 84.23                  | 77.58       | 0.1165                 | 0.1150      | 1021               | 1028        |
| 240/40   | 26/3.42           | 7/2.66  | 21.66            | 938.30      | 917.00      | 93.53                  | 85.37       | 0.1183                 | 0.1164      | 1022               | 1014        |
| 240/55   | 30/3.20           | 7/3.20  | 22.40            | 1070.50     | 1039.30     | 116.78                 | 106.65      | 0.1153                 | 0.1127      | 1050               | 1038        |
| 300/15   | 42/3.00           | 7/1.67  | 23.01            | 929.60      | 921.12      | 70.33                  | 66.49       | 0.0977                 | 0.0972      | 1141               | 1137        |
| 300/20   | 45/2.93           | 7/1.95  | 23.43            | 988.30      | 976.78      | 79.47                  | 74.24       | 0.0953                 | 0.0946      | 1162               | 1158        |
| 300/25   | 48/2.85           | 7/2.22  | 23.76            | 1040.30     | 1025.56     | 90.12                  | 83.35       | 0.0939                 | 0.0932      | 1177               | 1172        |
| 300/40   | 24/3.99           | 7/2.66  | 23.94            | 1107.00     | 1085.46     | 102.56                 | 94.40       | 0.0948                 | 0.0936      | 1176               | 1169        |
| 300/50   | 26/3.85           | 7/2.98  | 24.26            | 1177.00     | 1158.94     | 116.46                 | 106.20      | 0.0944                 | 0.0919      | 1187               | 1177        |
| 300/70   | 30/3.60           | 7/3.60  | 25.20            | 1354.80     | 1315.37     | 144.95                 | 130.70      | 0.0911                 | 0.0891      | 1226               | 1212        |
| 400/20   | 42/3.51           | 7/1.95  | 26.90            | 1271.90     | 1260.37     | 96.16                  | 90.93       | 0.0713                 | 0.0710      | 1401               | 1398        |
| 400/25   | 45/3.33           | 7/2.22  | 26.60            | 1277.30     | 1262.30     | 102.78                 | 96.01       | 0.0737                 | 0.0733      | 1375               | 1371        |
| 400/35   | 48/3.22           | 7/2.50  | 26.80            | 1326.30     | 1307.53     | 111.77                 | 104.56      | 0.0736                 | 0.0730      | 1381               | 1375        |
| 400/50   | 54/3.07           | 7/3.07  | 27.60            | 1477.10     | 1448.57     | 136.26                 | 126.94      | 0.0714                 | 0.0705      | 1419               | 1409        |
| 400/65   | 26/4.42           | 7/3.44  | 28.00            | 1570.10     | 1532.21     | 153.34                 | 140.32      | 0.0708                 | 0.0697      | 1433               | 1422        |
| 400/95   | 30/4.16           | 19/2.50 | 29.10            | 1773.30     | 1743.67     | 194.94                 | 175.35      | 0.0683                 | 0.0667      | 1481               | 1465        |
| 500/35   | 45/3.75           | 7/2.50  | 30.00            | 1619.80     | 1600.79     | 114.51                 | 107.30      | 0.0582                 | 0.0578      | 1608               | 1602        |
| 500/45   | 48/3.60           | 7/2.80  | 30.00            | 1682.10     | 1635.49     | 141.29                 | 132.23      | 0.0589                 | 0.0584      | 1600               | 1592        |
| 500/65   | 54/3.44           | 7/3.44  | 31.00            | 1854.70     | 1818.78     | 168.94                 | 155.92      | 0.0568                 | 0.0561      | 1648               | 1638        |
| 630/45   | 45/4.22           | 7/2.81  | 33.75            | 2050.00     | 2026.52     | 161.30                 | 152.20      | 0.0459                 | 0.0456      | 1865               | 1857        |
| 630/55   | 48/4.12           | 7/3.20  | 34.30            | 2171.60     | 2141.05     | 179.44                 | 169.30      | 0.0450                 | 0.0446      | 1909               | 1898        |
| 630/80   | 54/3.87           | 19/2.32 | 34.80            | 2337.60     | 2290.32     | 214.41                 | 197.54      | 0.0449                 | 0.0444      | 1922               | 1909        |
| 800/55   | 45/4.80           | 7/3.20  | 38.40            | 2653.80     | 2622.74     | 207.17                 | 197.03      | 0.0355                 | 0.0353      | 2218               | 2209        |
| 800/70   | 48/4.63           | 7/3.60  | 38.60            | 2743.80     | 2704.94     | 223.98                 | 209.73      | 0.0356                 | 0.0353      | 2219               | 2210        |
| 800/100  | 54/4.33           | 19/2.60 | 39.00            | 2925.50     | 2869.32     | 268.71                 | 247.52      | 0.0359                 | 0.0355      | 2230               | 2215        |
| 1000/125 | 54/4.84           | 19/2.90 | 43.54            | 3651.00     | 3581.46     | 334.92                 | 308.57      | 0.0287                 | 0.0284      | 2569               | 2556        |
| 1440/120 | 84/4.67           | 19/2.80 | 51.36            | 4824.80     | 4759.37     | 393.77                 | 369.20      | 0.0201                 | 0.0199      | 3194               | 3180        |

# ISO Certificates



# References

| Country  | Conductor type              | Total length |
|----------|-----------------------------|--------------|
| Thailand | ZTACIR 500 mm <sup>2</sup>  | 20.55 km     |
| Thailand | STACIR 435 mm <sup>2</sup>  | 473 km       |
| Nigeria  | ZTACIR 190 mm <sup>2</sup>  | 218 km       |
| Nigeria  | GZTACSR 410 mm <sup>2</sup> | 180 km       |
| Nigeria  | GZTACSR 185 mm <sup>2</sup> | 1830 km      |
| India    | ZTACIR 524 mm <sup>2</sup>  | 121.75 km    |
| India    | GZTACSR 630 mm <sup>2</sup> | 567 km       |
| Zambia   | STACIR 145 mm <sup>2</sup>  | 330 km       |
| Vietnam  | GZTACSR 310 mm <sup>2</sup> | 76.49 km     |
| Vietnam  | GZTACSR 410 mm <sup>2</sup> | 223 km       |
| USA      | ACSS/AW Thrasher            | 715.06 km    |
| Poland   | ACSS/TW Ostrich             | 46.995 km    |
| Panama   | ACSS/AW PEACOCK             | 352 km       |
| China    | ACSS/TW 240 mm <sup>2</sup> | 56.56 km     |
| China    | ACSS/TW 250 mm <sup>2</sup> | 50.56 km     |
| China    | ACSS/TW 300 mm <sup>2</sup> | 67.32 km     |
| China    | GZTACSR 240 mm <sup>2</sup> | 67.012 km    |
| China    | GZTACSR 300 mm <sup>2</sup> | 24 km        |
| China    | GZTACSR400 mm <sup>2</sup>  | 62 km        |
| China    | ZTACIR 240 mm <sup>2</sup>  | 181.87 km    |
| China    | ZTACIR 300 mm <sup>2</sup>  | 75 km        |
| China    | ZTACIR 345 mm <sup>2</sup>  | 20.56 km     |
| China    | ZTACIR 350 mm <sup>2</sup>  | 57.25 km     |



ZTT has established a complete, advanced quality inspection center of controlling raw materials and products quality. To ensure high quality of conductors, ZTT always selects raw materials of international and domestic brands. ZTT also has received authentications of ISO 9001, ISO 14001 and ISO 45001.