

TRANSMO

Enamelled Copper wire



CATALOGUE



www.transmo.com.cn

TRANSMO Wire forms your product!

Company profile

Zhongshan TRANSMO Wire Co., Ltd. is a professional enameled wire manufacturer for fine and ultra fine enameled wire, rectangular wire as well as Litz wire. The finest wire diameter reach 10 micron. TRANSMO have been a leading supplier for self-bonding wire and High Tension Wire. All the wire can be produced according to industry standards such as IEC 60317, NEMA MW1000, JIS C3202 or to customer specific requirements. TRANSMO wires is widely used in consumer electronics, telecommunication, automotive, new energy, IT industry and medical equipment.

With more than 15 years' experience in manufacturing enameled wire, TRANSMO people adopt advanced drawing machines and enameling machines, precise processing technology, and seriously quality control to produce wire with reliable and consistent quality. From incoming material, semi product, final product and delivery, the whole process is well recorded and monitored, the advanced code management allow our products with unique code and production is traceable.

TRANSMO supplied wires worldwide for 70 customers in more than 20 countries. We are experienced in international trade, we know how to understand the need and concern of customer, how to deliver goods to customer in any place in time.

TRANSMO will work closely with our valuable partners, develop and provide perfect products, improve the life of people, save environment and pursuit harmonious with local communities. All team member work together to achieve the above mission and make the company growth, and the company provides team member with opportunity of stable job and value realization.



Quality and Environmental Protection

TRANSMO had been introduced ISO9001:2015 quality management system, which covers every part and process. The effectiveness of the quality Management System is certified by 3rd party and will improve year by year. If you need the certificate please go to Document Centre of our office website to download.

TRANSMO has its own in house laboratory, which can provide complete tests of function and life of product to ensure supreme quality. Our close loop on-line laser measurement system are monitoring whole process to ensure full length of wire is good. Our quality engineers observe the chart of statistical process control and do 100% full inspection of each spool of wire. Our information and bar code system record every process, each spool of wire is traceable up to raw material, process and individual operator.

Workability of enameled wire is very important for customers. Different customer has different equipment and process technology, TRANSMO can supply wire suitable for different process to ensure the customers' process smooth and in high efficiency. We can do more than the standard.

Environmental Protection is our basic policy. All our conduct must be in accordance with The National and international laws and regulations regarding environmental protection. We have introduced ISO14001:2015 environmental management system and certified by 3rd party. The certificate is available at Document Centre of our official website. All our products compliance with RoHS and REACH directives. The relative test report is available at Document Centre.



Patent Certificate



ISO9001 Certificate



REACH Report



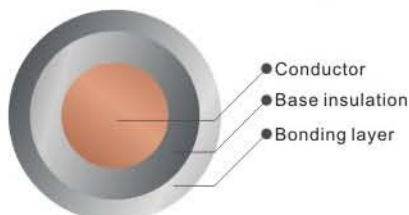
RoHS Report

Self-bonding wire

Self-bonding wire is a special wire that overcoated with a bonding layer on the top of base insulation, with this bonding layer, wires can be adhered to each other by heating or solvent. The coil wound by such wire can be fixed and formed by heating or solvent method.



Structure of self bonding wire



Identification of self-bonding wire

2 HB UE W/ 155 0.10 ① R

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Insulation thickness:
For JIS C3202: 0=Class 0; 1=Class 1; 2=Class 2; 3=Class 3.
For IEC 60317: 0=Grade 3; 1=Grade 2; 2=Grade 1; 3=Grade 0.
For NEMA MW1000: 0=Triple; 1=Heavy; 2=Single.
- ② Bonding Method: HB=Heat bonding; SB=Solvent bonding.
- ③ Type of Enamel: UE=Polyurethane; SEI=Solderable polyesterimide; EI/Al=Polyesterimide(base coat)+Polyamideimide(top coat); AI=Polyamideimide.
- ④ Means Wire.
- ⑤ Thermal class: 155, 180, 200, 220.
- ⑥ Nominal/conductor diameter in mm.
- ⑦ Thermal property of bonding layer, refer to below data form.
- ⑧ Color: Default=Nature; R=Red; B=Blue; G=Green; BR=Brown; V=Violet; BK=Black.

Product range

Code	Bonding method	Bonding condition	Base insulation	Thermal class	Diameter(mm)
HB	Heat bonding	110-220℃	UEW SEIW AIW	155, 180	0.010-0.60
SB	Solvent bonding	Methanol/Alcohol		155, 180	0.010-0.60

Properties of self-bonding wire

Material	Plastic property	Bonding method	Bonding temperature (°C)	Max. temperature of application(°C)	Code of thermal property of bonding-layer
Polyvinylbutyral	Thermoplastic	Solvent/heat	120-140	140	Default
Polyamide	Thermoplastic	Heat	120~140	140	①
Polyamide	Thermoplastic	Heat	160~180	180	③
Polyamide	Thermoplastic	Heat	180~200	200	⑤
Polyamide	Thermosetting	Alcohol+heat	200-220	220	⑦

Applications

Voice coil; Buzzer; Vibration motor; Senior watch coil; Magnetic head; hearing aid coil; Slot Machine and IC card, etc.



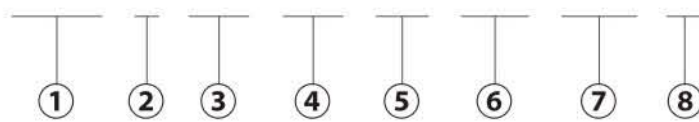
High Tension Wire

High tension wire is special alloy wire designed for application need the wire has higher tensile strength and anti-bending performance and designated as, DHT, SDHT, UDHT as described below. The wire has tensile strength 25% higher than pure copper wire, more durable, higher conductivity and with better anti-bending performance. Because HTW mostly used in electro-acoustic area, the wire usually is self-bonding wire.



Identification of High Tension Wire

DHT 2 HB UE W/ 155 0.10 R



- ① Type of conductor: DHT=Normal High Tension Wire; SDHT=Supper High Tension Wire; UDHT=Ultra High Tension Wire.
- ② Insulation thickness:
For JIS C3202: 0=Class 0; 1=Class 1; 2=Class 2; 3=Class 3.
For IEC 60317: 0=Grade 3; 1=Grade 2; 2=Grade 1; 3=Grade 0.
For NEMA MW1000: 0=Triple; 1=Heavy; 2=Single.
- ③ Bonding Method: HB=Heat bonding; SB=Solvent bonding.
- ④ Type of Enamel: UE=Polyurethane; SEI=Solderable polyesterimide; EI/Al= Polyesterimide(base coat)+Polyamideimide(top coat); AI=polyesterimide.
- ⑤ Means Wire.
- ⑥ Thermal class: 155, 180, 200, 220.
- ⑦ Nominal/conductor diameter in mm.
- ⑧ Color: Default=Nature; R=Red; B=Blue; G=Green; BR=Brown; V=Violet; BK=Black.

Features:

- The tensile strength is 20%-90% higher than copper wire (suitable for high winding process, prevent breakage of wire at pin connection).
- Conductivity >77%
- The properties of insulation and self-bonding layer is the same as enameled copper wire.
- Good solderability, the same as enameled copper wire.

Parameters of high tension wire

Item	Cu	DHT	SDHT	UDHT
Tensile strength(MPa)	240-270	290-340	350-390	400-450
Yield strength(MPa)	120-160	170-230	250-290	300-350
Bending proof performance(%)	100	125	560	910
Conductivity(%)	100	95	88	77

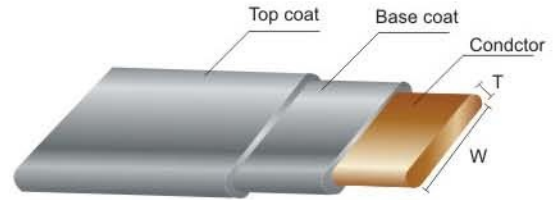
Application:

The wire is widely used in high class voice coil (micro speaker), receiver, magnetic head coil, mobile phone coil, moving coil.

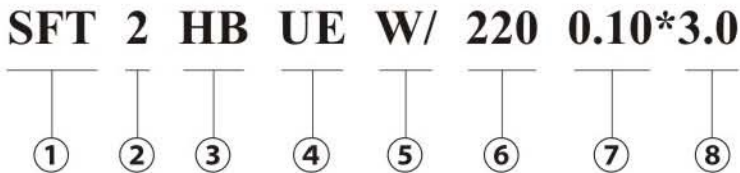


Rectangular wire

Rectangular or flat wire is that the shape of the conductor is rectangular or square, it has high advantages compare with round wire, more and more applications adopt this wire instead of round wire.



Identifications of Rectangular wire.



- ① The code of Rectangular wire.
- ② Insulation thickness:
For JIS C3202: 0=Class 0, 1=Class 1, 2=Class 2, 3=Class 3.
For IEC 60317: 0=Grade 3, 1=Grade 2, 2=Grade 1, 3=Grade 0.
For NEMA MW1000: 0=Triple, 1=Heavy, 2=Single.
- ③ Bonding Method: HB=Heat bonding, SB=Solvent bonding.
- ④ Type of Enamel: UE=Polyurethane, AI=Polyamideimide.
- ⑤ Means Wire.
- ⑥ Thermal class: 155, 180, 200, 220.
- ⑦ Thickness of wire in mm.
- ⑧ Width of wire in mm.

The features and advantages:

- The rectangular wire has more surface area. The feature may reduce skin-effect evidently.
- Rectangular wire may achieve higher space factor and space volume ratio, reduce resistance effectively, allow bigger current, get higher Q value and good for high current and high load applications.
- Components made from rectangular wire have simple structure, good heat dissipation performance, stable and uniform.
- Components made from rectangular wire have good EDI performance with low vibration, low noise and easy to mount.
- The wire makes components smaller for same power.
- No crack for edge-wise winding.

Product range:

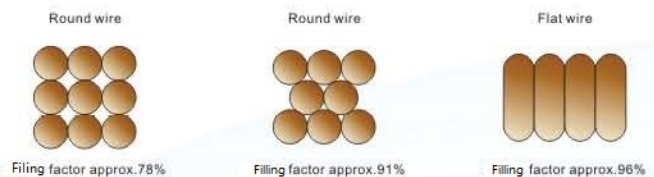
Thickness: <2mm

Width: <8mm

Type of insulation: UEW, AIW

Thermal class: 155, 180, 220.

Self bonding type is available.



Applications:

Inductor, transformer, filter, mutual inductor, motor, voice coil, solenoid valve.



Enameled round copper wire

Many varieties of enameled round copper wire types is available. The different insulations are described in different standards, such as IEC 60317, NEMA MW 1000 or JIS C 3202. If you have more requirement that is not defined in the standard, please contact our sales people.

Especially, our Ultra fine wire is one of our main products. The finest wire reach 0.010mm (10 Micron), very few manufacturers in the world can produce such fine wire. The Ultra fine wire usually used for advance hearing aid, medical equipment and other fine precise instruments.



Identification of Enameled round copper wire

2 UE W/ 155 0.10 R

① ② ③ ④ ⑤ ⑥

- ① Insulation thickness:
For JIS C3202: 0=Class 0, 1=Class 1, 2=Class 2, 3=Class 3.
For IEC 60317: 0=Grade 3, 1=Grade 2, 2=Grade 1, 3=Grade 0.
For NEMA MW1000: 0=Triple, 1=Heavy, 2=Single.
- ② Type of Enamel: UE=Polyurethane, SEI=Solderable polyesterimide, EI/AI= Polyesterimide(base coat)+Polyamideimide(top coat), AI=Polyamideimide.
- ③ Means Wire.
- ④ Thermal class: 155, 180, 200, 220.
- ⑤ Nominal/conductor diameter in mm.
- ⑥ Color: Default=Nature, R=Red, B=Blue, G=Green, BR=Brown, V=Violet, BK=Black.

Enameled round copper wire catalogue

Product type	UEW	SEIW	EI/AIW	AIW
Product description	Solderable polyurethane enameled round copper wire	Solderable polyesterimide enameled round copper wire	Polyesterimide overcoated with polyamideimide enameled round copper wire	Polyamideimide enameled round copper wire
Diameter range	0.010-0.60mm (AWG58-AWG22)	0.015-0.60mm (AWG58-AWG22)	0.015-0.60mm (AWG58-AWG22)	0.015-0.60mm (AWG58-AWG22)
Thermal class	155, 180.	180	200	220
Standard appliance	JIS C 3202. IEC 60317-20; IEC 60317-51. NEMA MW 79-C; NEMA MW 82 -C.	IEC 60317-23. NEMA MW 77-C.	IEC 60317 -13. NEMA MW 35-C; NEMA MW 73-C	IEC 60317 -26. NEMA MW 81-C.
Features	<ul style="list-style-type: none"> ◆ Solderable. ◆ Low dielectric loss for HF ◆ Excellent insulation ◆ Excellent performance in high speed winding ◆ Free to Color (N, R, G, B, V, BK, BR) 	<ul style="list-style-type: none"> ◆ Solderable at 450°C - 470 °C ◆ Excellent insulation ◆ Good thermal properties ◆ Good mechanical resistance 	<ul style="list-style-type: none"> ◆ very high thermal properties ◆ good chemical resistance ◆ Good mechanical resistance 	<ul style="list-style-type: none"> ◆ Very high thermal class ◆ Excellent thermal properties ◆ Very good chemical resistance
Applications	Small transformers, linear motors, relays, solenoids, gear motors, watch coils, magnetic heads, instruments coils.	Small motors, small transformers, automotive coils.	Aerospace and military applications, refrigeratory compressors.	Aerospace and military applications.

Litz wire

Litz wire is made of several strands of enameled copper wire that are twisted together. Litz wire is used to reduce the losses caused by the skin-effect in high frequency applications. Compare with single wire in same cross section, the usage of Litz wire can reduce resistance and increase inductance, and increase the effectiveness and produce less heat. Meanwhile, Litz wire has much better mechanical flexibility.



Identification of Litz wire:

LZ 2 UE W/ 155 0.10*200

① ② ③ ④ ⑤ ⑥ ⑦

- ① The code of Litz wire.
- ② Insulation thickness:
For JIS C3202: 0=Class 0; 1=Class 1; 2=Class 2; 3=Class 3.
For IEC 60317: 0=Grade 3; 1=Grade 2; 2=Grade 1; 3=Grade 0.
For NEMA MW1000: 0=Triple; 1=Heavy; 2=Single.
- ③ Type of Enamel: UE=Polyurethane; SEI=Solderable polyesterimide; EI/AI= Polyesterimide(base coat)+Polyamideimide(top coat); AI=polyesterimide.
- ④ Means Wire.
- ⑤ Thermal class: 155, 180, 200, 220.
- ⑥ Nominal/conductor diameter of solid strand in mm.
- ⑦ Number of strand.

Product range:

No. of strands: From 2 up to 36000

Size of strand: From 0.020 mm up to 0.60mm

Type of strand: UEW, SEIW, EI/AIW, AIW.

Overall diameter: 0.10-10mm

Cross section: < 50mm²

No. of turns or length of pitch: From 10 up to 1200 turns/m or 100-0.83mm

Direction of turns: Z or S

Features:

- For High Frequency application, Litz wire can reduce Skin-effect, increase current density, reduce heat producing.
- The diameter of strand may be selected depend on the frequency of application.
- The Litz wire is more flexible and better anti-bending performance compare with solid wire.

Applications:

Inductive heating, magnetic components, power supply and power wireless transfer, transformer for high frequency, ultrasonic generators.



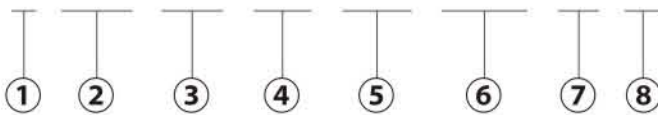
Served Litz wire

This is a group of wire served with fiber or silk. The material is including Dacron fiber, Nylon fiber, natural silk, bondable fiber (by Acetone or by heating).



Identification of Served Litz Wire

USTC 2 UE W/ 155 0.10*200



- ① Product code:
USTC: Litz wire served with single layer of fiber.
UDTC: Litz wire served with double layers of fiber.
UDATC: Litz wire served with base fiber and bondable layer (By Acetone).
UDHTC: Litz wire served with base fiber and bondable layer (By heating).
- ② Insulation thickness:
For JIS C3202: 0=Class 0; 1=Class 1; 2=Class 2; 3=Class 3.
For IEC 60317: 0=Grade 3; 1=Grade 2; 2=Grade 1; 3=Grade 0.
For NEMA MW1000: 0=Triple; 1=Heavy; 2=Single.
- ③ Type of Enamel: UE=Polyurethane; SEI=Solderable polyesterimide; EI/AI=Polyesterimide(base coat)+Polyamideimide(top coat); AI=Polyamideimide.
- ④ Means Wire.
- ⑤ Thermal class: 155, 180, 200, 220.
- ⑥ Nominal/conductor diameter of solid strand in mm.
- ⑦ Number of strand.
- ⑧ Color: Default=Nature; R=red; B=Blue; G=Green; BR=Brown; V=Violet; BK=Black.

Product range:

No. of strands: From 2 up to 36000

Diameter of strand: From 0.020mm up to 0.60mm

Type of strand: UEW, SEIW, EI/AIW, AIW.

Overall diameter: 0.20-10mm

Cross section area: <math>< 50\text{mm}^2</math>

Features:

- Served Litz wire has all the features of Litz wire.
- During winding process, the layout of wire is smooth and in good order. Q value is high. Provide higher power for transformer.
- With the protection of served layer, the wire has better electrical strength after process.
- Improve the effect of lacquer process.
- The self-bonding type may form the coil, it may reduce the structure and the process of component.

Application

High frequency electrical transformer, solar inverter, inductor coil, wireless battery charger.



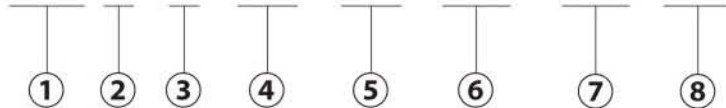
Taped Litz wire

This is a wire or Litz wire wrapped with a Mylar or other tapes made from different material and at certain overlapping rate.



Identification of Taped Litz Wire

ML-T 2 UE W/ 155 0.10*200



- ① The code of Taped Litz wire.
- ② Material of tape: T=PET; I= PI; N=PEN.
- ③ Insulation thickness:
For JIS C3202: 0=Class 0; 1=Class 1; 2=Class 2; 3=Class 3.
For IEC 60317: 0=Grade 3; 1=Grade 2; 2=Grade 1; 3=Grade 0.
For NEMA MW1000: 0=Triple; 1=Heavy; 2=Single.
- ④ Type of Enamel: UE=Polyurethane; SEI=Solderable polyesterimide; EI/AI=Polyesterimide(base coat)+Polyamideimide(top coat); AI=Polyamideimide.
- ⑤ Means Wire.
- ⑥ Thermal class: 155, 180, 200, 220.
- ⑦ Nominal/conductor diameter of solid strand in mm.
- ⑧ Number of strand.

Product range:

Overlapping: 50%, 67%, 75%

Number of stands: 1-36000

Diameter of strand: From 0.020mm up to 0.60mm

Type of strand: UEW, SEIW, EI/AIW, AIW.

Overall diameter: 0.25-10mm

Cross section area: Max.50mm²

Features:

- Taped Litz wire has all the features of Litz wire.
- High insulation strength.
- High thermal performance.
- High resistance to radiation (PI tape).

Applications:

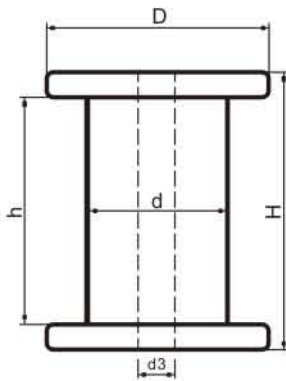
Transformers requires for high Interlayer discharge voltage, motor, transformer and meter with requirements for high resistance to temperature and radiation.



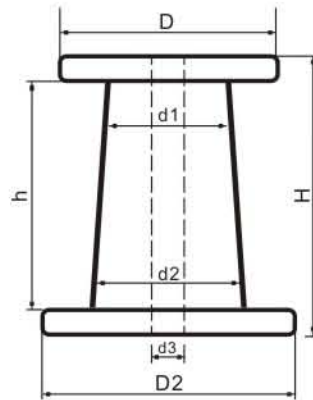
Spools & Packaging

Enamelled copper wire is wound on spools of different sizes and shapes. The wire diameter determines the spool size which can be used. Ultra fine wire typically is produced on smaller spools while bigger wire is wound on larger spools.

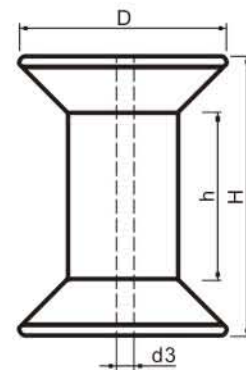
The below shows the type and dimension of standard spools.



Cylindrical Type(PL)



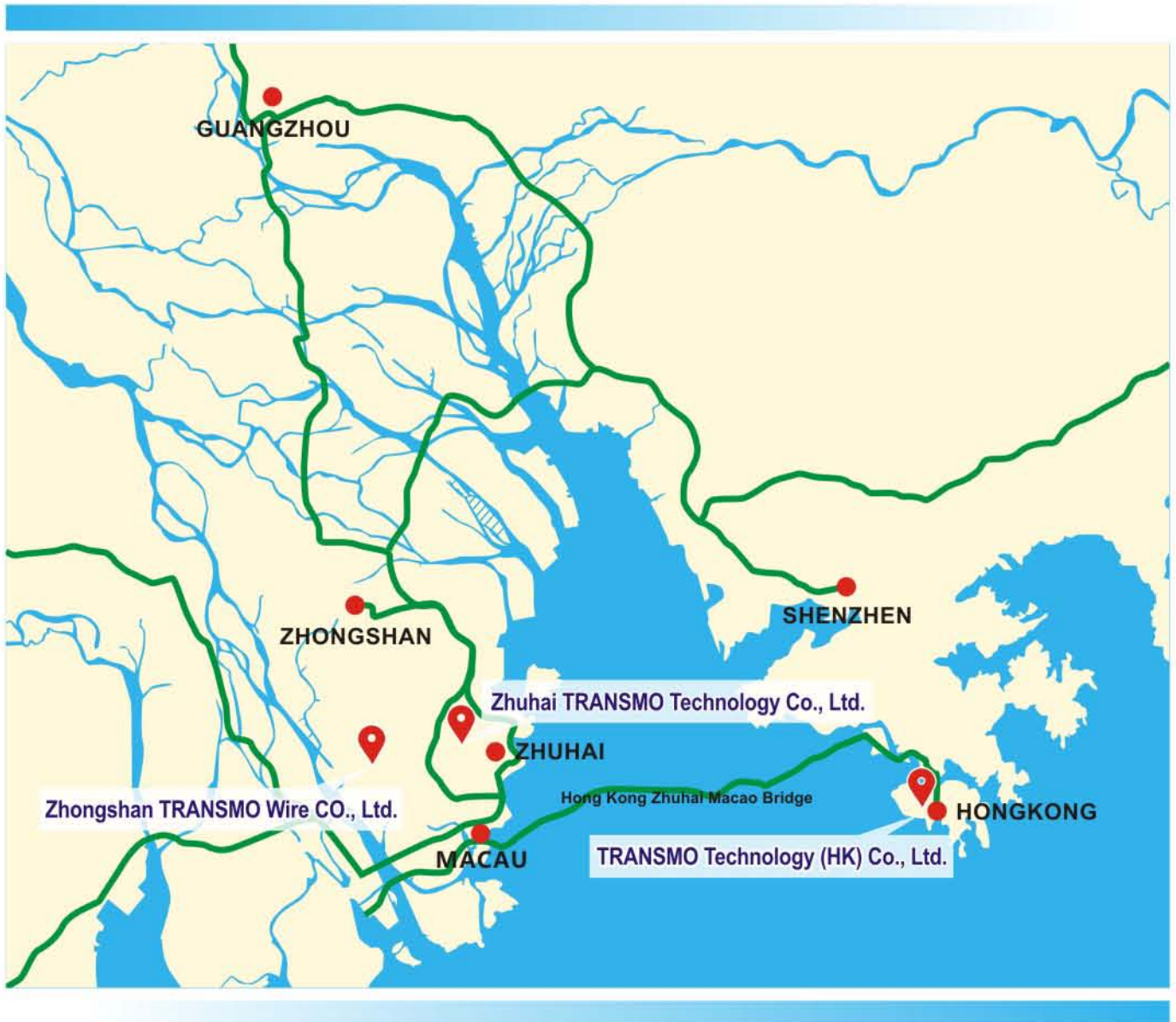
Tapered Type(PT)



Biconical Type(HK)

Type of EU	Type of Asia	D(D2) [mm]	D1 [mm]	d(d2) [mm]	d1 [mm]	d3 [mm]	h [mm]	H [mm]	Weight [-2,+4][g]	Standard net weight (Kg)	Nos of spool per carton	Recommended Wire Diameter[mm]
	PL-1	80	-	60	-	20	100	120	86	1	8	0.020 < Dia ≤ 0.030
	PL-2	100	-	65	-	20	125	145	160	2	6	0.028 < Dia ≤ 0.060
	PT-4	140	124	86	74	26	170	200	240	4	4	0.060 < Dia ≤ 0.160
	PL-4	125	-	80	-	26	160	190	270	4	4	0.030 < Dia ≤ 0.127
	PL-8	160	-	100	-	30	200	230	470	8	2	0.050 < Dia ≤ 0.10
	PT-10	180	160	110	96	30	200	230	420	10	2	0.160 ≤ Dia ≤ 0.50
	PT-15	200	180	110	96	30	200	230	560	15	2	0.180 ≤ Dia ≤ 0.50
	PT-25	230	215	130	110	30	250	280	780	25	1	0.180 ≤ Dia ≤ 0.50
76/45	K3000	63.5	-	44.4	-	16	60	86	70	0.3	6/15	0.010 ≤ Dia ≤ 0.030
PL-600S	OR-K	106	-	76	-	20	75	112	165	0.8	6	0.020 ≤ Dia ≤ 0.060
HK 125/45R	K125	125	-	71	-	16	65	125	165	2.5	4	0.023 ≤ Dia < 0.060
HK 159/45R	K159	160	-	90	-	22	85	160	315	4.5	2	0.045 < Dia < 0.180
HK 199/45R	K199	200	-	112	-	22	106	200	600	10	1	0.050 ≤ Dia ≤ 0.10

In case the required spool is not listed above, please contact our sales people for more information



Contact:

Email: sale@transmo.com.cn

Tel: +86 756 2272948

Address:

Zhongshan TRANSMO Wire Co., Ltd.

Area B, Building B2, No. 38, Qianjin Raod, Tanzhou Town, Zhongshan, Guangdong, China.

Zhuhai TRANSMO Technology Co., Ltd.

Room 810, Youhua Commercial Center, No. 2027, Yingbin Raod, Zhuhai, China.

TRANSMO Technology (HK) Co., Ltd.

Units A&B 15/F, Neich Tower, 128 Gloucester Rd, Wanchai, HK.