

# Amphenol Enabling the Electronics Revolution

# Amphenol Sine RT360 series product introduction

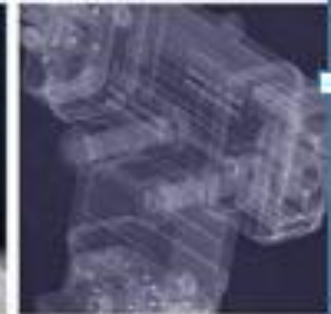
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Introduction

# MORE PRODUCT BETTER SERVICE GLOBAL CONNECTOR



## AIIO CHINA - 2023

[www.amphenol-sine.com.cn](http://www.amphenol-sine.com.cn)  
[www.amphenol-cz.cn](http://www.amphenol-cz.cn)

# Amphenol

- **Founded** in 1932
- **World Headquarters:** Wallingford, Connecticut, USA
- 2022 Sales grew 16% \$12.60 Billion
- **91,000+** Employees, 140+ operating units
- **140 Operating units Worldwide, 53 WOFE (Wholly Owned Foreign Enterprise) in China**
- **Industries:** Industrial/Automotive . Mobile Devices / Networks . Information Technology . Broadband Communications . Data Communications Equipment Military/Commercial Aerospace



**Amphenol Corporation** is one of the world's leading producers of electronic and fiber optic connectors, cable and interconnect systems. Amphenol products are engineered and manufactured in the Americas, Europe, Asia and Africa and sold by a worldwide sales and marketing organization. Amphenol has a diversified presence as a leader in high growth areas of the interconnect market including: Military, Commercial Aerospace, Automotive, Broadband Communication, Industrial, Information Technology and Data Communications Equipment, Mobile Devices and Wireless Infrastructure.

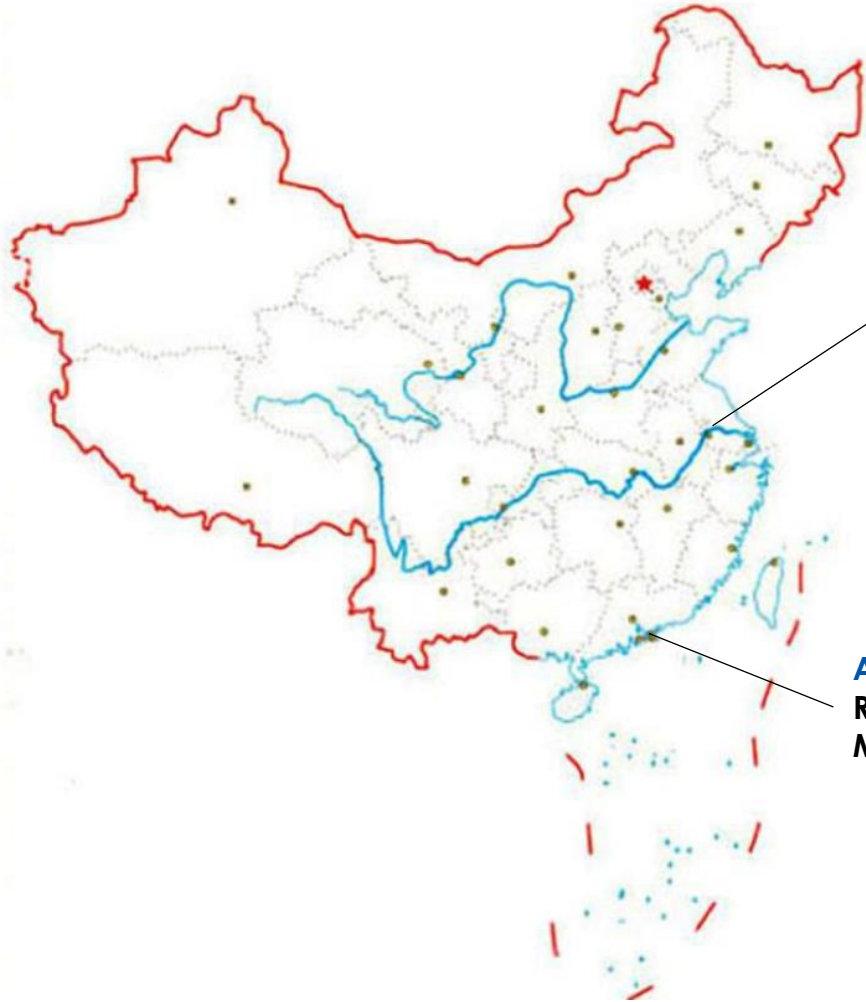
# AIIO China

Amphenol International Industrial Operation China (AIIO China) including three business units -- SINE , CATI and AAL, the products are famous in domestic and abroad, are widely applied in Industrial automation, Electric vehicles, New energy storage, Solar & Wind power, Heavy equipment, Agricultural machinery, Railway transportation, Communication, Audio, Medical etc. AIIO China keeps 10%+ sales growth annually

- Gross area 10000 m<sup>2</sup>
- Area
  - Production 5000 m<sup>2</sup>
  - Warehouse 2000 m<sup>2</sup>
  - Others (office etc) 2000 m<sup>2</sup>
- Over 600+ employees
- 2022 sales amount \$98 million(Sine \$71M)



## Location of Amphenol-TFC (Changzhou) Communication Equipment Co., Ltd



**Amphenol-TFC (Changzhou)  
Communication Equipment Co., Ltd  
Manufacturing center**

**Amphenol Sine Systems Shenzhen Office  
Research & development (R&D) and  
Marketing center**



# Ecomate - RT360 Series (RT, RTOW, RTHP, RTS & FLS)

RT360 industrial circular connectors are designed to meet the requirements of MIL-C-26482 series military specification. It has been developed to be completely compatible with all other company products such as the Souriau TRIM, TRIO, UTG and UTP series, ITT Cannon Trident series. This series is a widely used connector for the electric vehicles, robotics, military, welding industries, storage energy and other demanding interconnect applications.

## Technical Data

- Operating Temperature: :  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ ,
- Wire to panel and wire to wire connection type
- 500 Mating Cycles, salt spray: 48h and 96h
- IP67&IP69K rated in mated condition
- Circular bayonet lock. Able to withstand extreme vibration and mechanical shock.
- Anti-misinsertion keying available. Five positions (N, W, X, Y, Z)
- Good shielding capability with backshell / Unshielded capability with plastic end cap
- UL1977. RoHS compliant, flammability rating of UL94-V0



## RT Series (Normal Voltage)

### Technical Data

- 8 shell sizes & 25 insert configurations
- With standard insert arrangements & mixed power and signal arrangements.
- 4 kinds of contacts:
  - 1) 8 contact size, Rated Voltage 500V AC/DC, 45A, 10~12AWG
  - 2) 2.5mm contact size, Rated Voltage 500V AC/DC, 23A, 12~14AWG
  - 3) 16 contact size, Rated Voltage 500V AC/DC, 13A, 14~26AWG
  - 4) 20 contact size, Rated Voltage 250V AC/DC, 7.5A(machined), 5A(stamped & formed), 20~30AWG





# RT Series insert arrangement and accessories



冲压端子  
Stamped & Formed contacts



机加工端子  
Machined contacts



RT			
	16# Contacts (1.6mm) 13A/500V	Mixed Power & Signal	Contacts (2.5mm) 23A
SHELL 10	 10 - 3  10 - 4	 10 - 2 16# (13A) & 20# (5A) 500V AC/DC  10 - 3W3 16# (13A) & 20# (5A) 500V AC/DC	N/A
SHELL 12	 12 - 3  12 - 4  12 - 8	 12 - 2 2.5mm (23A) & 20# (5A) 500V AC/DC	N/A
SHELL 14	 14 - 7  14 - 8  14 - 12	 14 - 2 2.5mm (23A) & 16# (13A) 500V AC/DC  14 - 3 8# (45A) 600V AC/DC	 14 - 4 500V AC/DC
SHELL 16	 16 - 19	 16 - 4 8# (45A) 500V AC/DC  16 - 09 2.5mm (23A) 500V AC/DC & 16# (13A) 500V AC/DC	N/A
SHELL 18	 18 - 23	 18 - 103 16# (13A) & RF# (1A) 500V AC/DC	 18 - 8 500V AC/DC
SHELL 20	 20 - 28	 20 - 11	N/A
SHELL 22	 22 - 35  22 - 38	N/A	N/A
SHELL 24	 24 - 48	N/A	N/A

## RT0W Series (Low Voltage)



### Technical Data

- Mated with MIL-C-26482 series connector
- 5 shell sizes & 5 insert configurations
- High density arrangements from 6~32 contacts.
- 20 contact size, Rated voltage 250V AC/DC, Rated current 7.5A(machined), 5A(stamped & formed), 20~30AWG

# RT0W Series insert arrangement and accessories



	RT0W
	20 # Contacts (1.0mm) 5A/250V (Stamped cont.) 7.5A/250V (Machined cont.)
SHELL 10	 10 - 6
SHELL 12	 12 - 10
SHELL 14	 14 - 19
SHELL 16	 16 - 26
SHELL 18	 18 - 32

## RTS Series (Plastic Type)



### Technical Data

- 6 shell sizes
- Low cost connection solution
- With standard insert arrangements & mixed power and signal arrangements.
- 4 kinds of contacts:
  - 1) 8 contact size, Rated voltage 500V AC/DC, Rated current 45A, 10~12AWG
  - 2) 2.5mm contact size, Rated voltage 500V AC/DC, Rated current 23A, 12~14AWG
  - 3) 16 contact size, Rated voltage 500V AC/DC, Rated current 13A, 14~26AWG
  - 4) 20 contact size, Rated voltage 250V AC/DC, Rated current 7.5A(machined), 5A(stamped & formed), 20~30AWG

# RTS Series insert arrangement and accesories



RTS				
	16# Contacts (1.6mm)13A	Mixed Power & Signal	Contacts (2.5mm) 23A	20 # Contacts (1.0mm) 5A (Stamped cont.) 7.5A (Machined cont.)
SHELL 8	N/A	N/A	N/A	 8 - 3      8 - 4 7A 250V AC/DC
SHELL 10	 10 - 3      10 - 4 500V AC/DC	 10 - 2      10 - 3W3 16# (13A) & 20# (5A)    16# (13A) & 20# (5A) 500V AC/DC                  500V AC/DC	N/A	 10 - 6 250V AC/DC
SHELL 12	 12 - 3      12 - 4      12 - 8 600V AC/DC      500V AC/DC	 12 - 2 2.5mm (23A) & 20# (5A) 500V AC/DC	N/A	 12 - 10 250V AC/DC
SHELL 14	 14 - 7      14 - 8      14 - 12 500V AC/DC	 14 - 2      14 - 3 2.5mm (23A) & 16# (13A)    8# (45A) 500V AC/DC                  600V AC/DC	 14 - 4 500V AC/DC	 14 - 19 250V AC/DC
SHELL 16	 16 - 19 500V AC/DC	 16 - 4      16 - 09 8# (45A)      2.5mm (23A) & 16# (13A) 600V AC/DC      500V AC/DC	N/A	 16 - 26 250V AC/DC
SHELL 18	 18 - 23 500V AC/DC	 18 - 103 16# (13A) & RF# (1A) 500V AC/DC	 18 - 8 500V AC/DC	 18 - 32 250V AC/DC

# FLS Series (Quick Lock)

## Technical Data

- 3 shell sizes
- Quick lock and unlock
- With standard insert arrangements & mixed power and signal arrangements.
- 4 kinds of contacts:
  - 1) 8 contact size, Rated voltage 500V AC/DC, Rated current 45A, 10~12AWG
  - 2) 2.5mm contact size, Rated voltage 500V AC/DC, Rated current 23A, 12~14AWG
  - 3) 16 contact size, Rated voltage 500V AC/DC, Rated current 13A, 14~26AWG
  - 4) 20 contact size, Rated voltage 250V AC/DC, Rated current 7.5A(machined), 5A(stamped & formed), 20~30AWG



# RLS Series insert arrangement and accesories



FLS						
	16# Contacts (1.6mm)13A		Mixed Power & Signal		Contacts (2.5mm) 23A	20 # Contacts (1.0mm) 5A (Stamped cont.) 7.5A (Machined cont.)
SHELL 10	 10-3 500V AC/DC	 10-4 500V AC/DC	 10-2 16# (13A) & 20# (5A) 500V AC/DC	 10-3W3 16# (13A) & 20# (5A) 500V AC/DC	N/A	 10-6 250V AC/DC
SHELL 12	 12-3 600V AC/DC	 12-4 500V AC/DC	 12-8 500V AC/DC	 12-2 2.5mm (23A) & 20# (5A) 500V AC/DC	N/A	 12-10 250V AC/DC
SHELL 14	 14-7 500V AC/DC	 14-8 500V AC/DC	 14-12 500V AC/DC	 14-2 2.5mm (23A) & 16# (13A) 500V AC/DC	 14-3 8# (45A) 600V AC/DC	 14-4 500V AC/DC
					 14-19 250V AC/DC	

# RTHP Series (High Power)

## Technical Data






- 4 Shell Sizes
- High Reliability
- Features Amphenol's **RADSOK®** contact technology
- Single Pole High Power Arrangements
- 3.6mm,6mm,8mm,10mm contact sizes
- Operating voltage 630V, current rating 65A~300A





# RTHP Series insert arrangement and accessories



	RTHP
	Single Pin Power Radsok® contacts 630V AC/DC
SHELL 10	N/A
SHELL 12	 12 - 1 3.6mm (86A)
SHELL 14	 14 - 1 6mm (120A)
SHELL 16	 16 - 1 8mm (180A)
SHELL 18	N/A
SHELL 20	  20 - 1 10mm (300A)      20 - 3 3.6mm (86A)

# Stator & Install Tool (For high density arrangement)



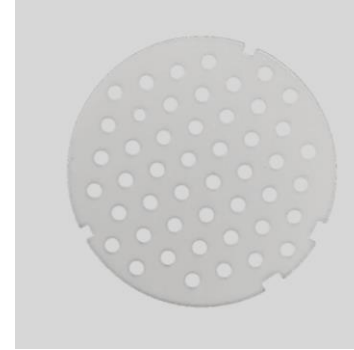
RT-1208



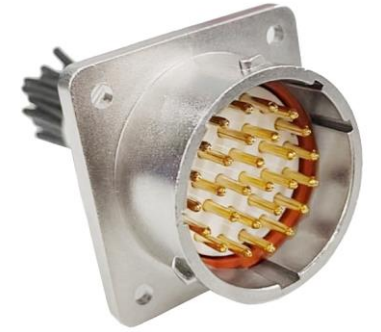
RT-1210



RT-2028



RT-2448



FT-1208



FT-1210

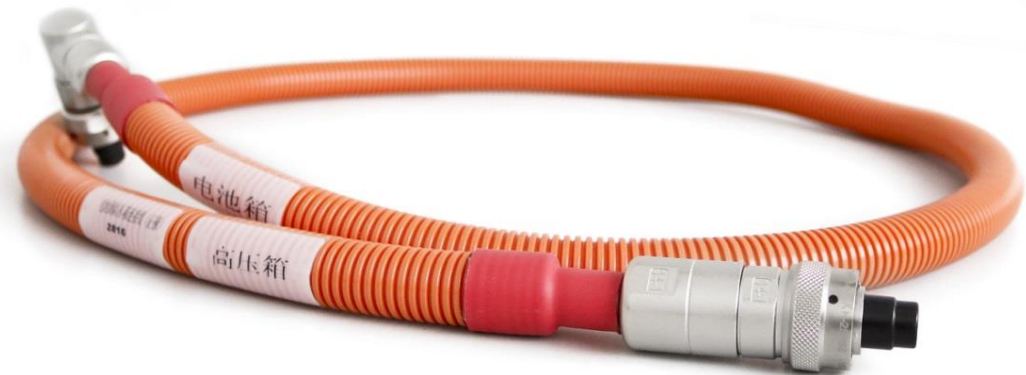


FT-2028

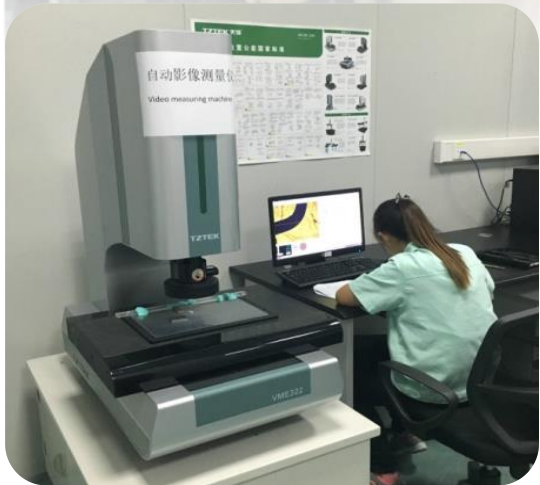


FT-2448

# Cable assembly with RTHP connectors



# Workplace in Changzhou & Shenzhen



# Laboratory Test Equipment 3-1



Voltage drop tester



Temperature rise test equipment

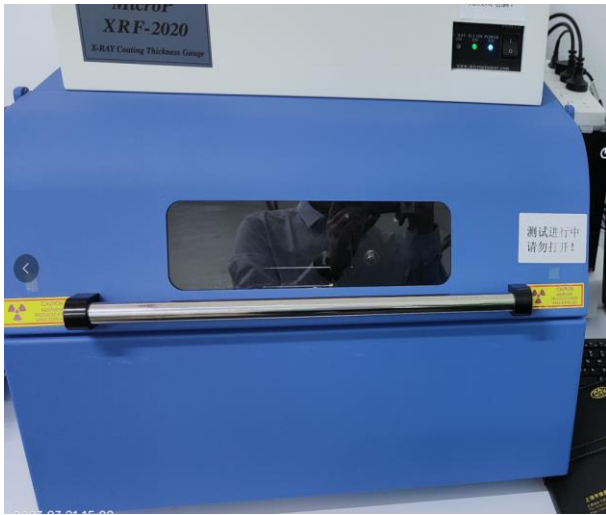


Dielectric strength tester



Low level resistance tester

# Laboratory Test Equipment 3-2



Film thickness  
measurement



Thermal shock test  
equipment

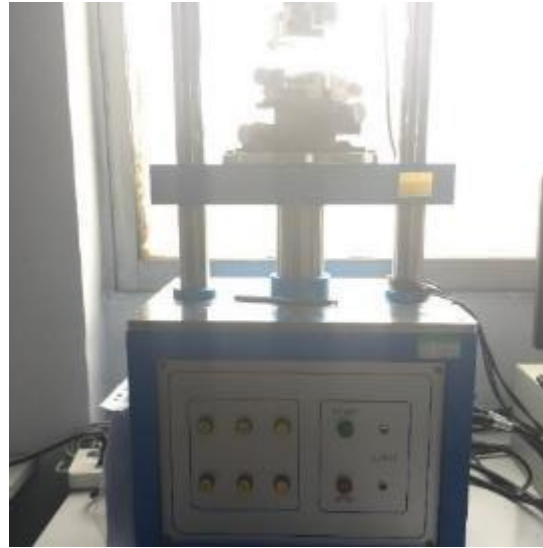


Constant temperature  
and Humidity  
equipment



high-temperature  
oven

# Laboratory Test Equipment 3-3



**Tensile tester**

**Lifetime tester**

**Impact testing equipment**

**Vibration testing equipment**

# Applications of RT360 series

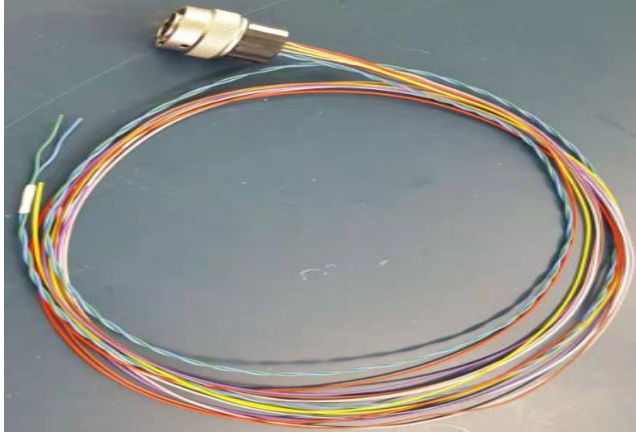


**RT360 series**





## RT360 Series Success Story



- **Country:** Japan
- **Application:** Signal acquisition harness for EV car battery pack
- **Product:** RT 12-8 wire harness



# RT360 Series Success Story



- **Country:** Thailand
- **Application:** BMS for E-Ferry
- **Product:** RT 4P, 19P & RTHP 70sqmm

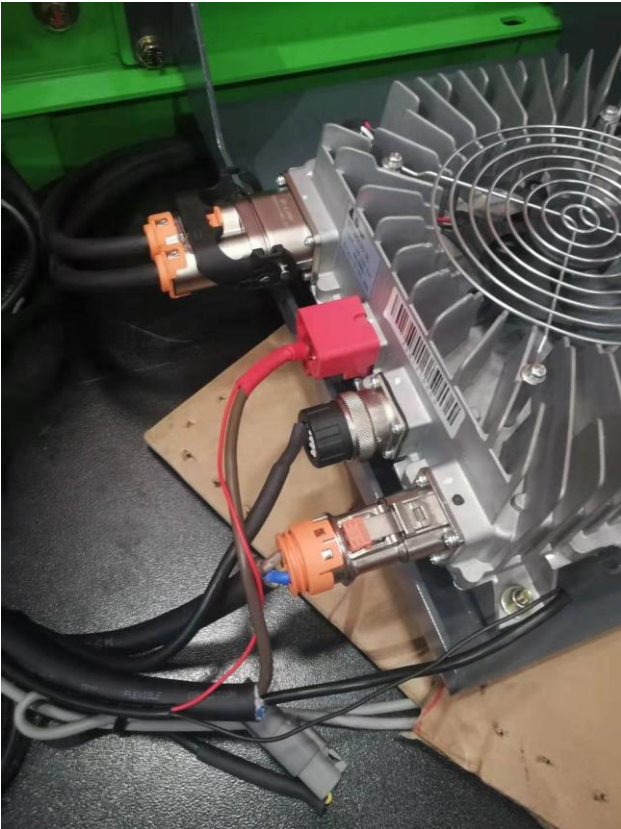


# RT360 Series Success Story



- **Country:** China
- **Application:** Motor & controller of garden machinery
- **Product:** RTHP, RT, AHDP, ATHD, AT

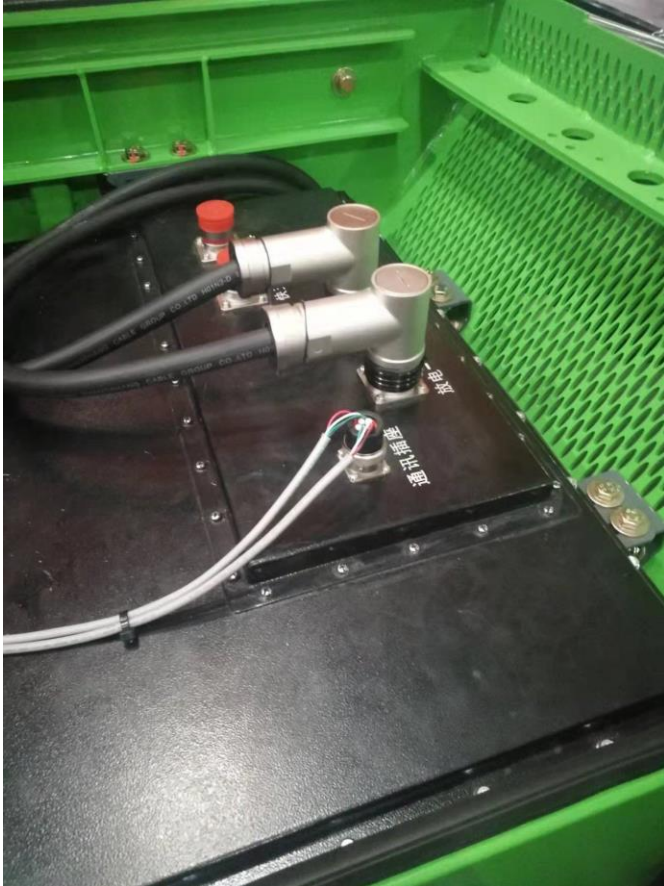
# RT360 Series Success Story



- **Country:** China
- **Application:** Air cooled charger for EV car
- **Product:** RT14-12



# RT360 Series Success Story



- **Country:** China
- **Application:** Communication interface for battery pack
- **Product:** RT12-8



# RT360 Series Success Story



- **Country:** China
- **Application:** PDU distribution box for electric golf cart
- **Product:** RT22-28

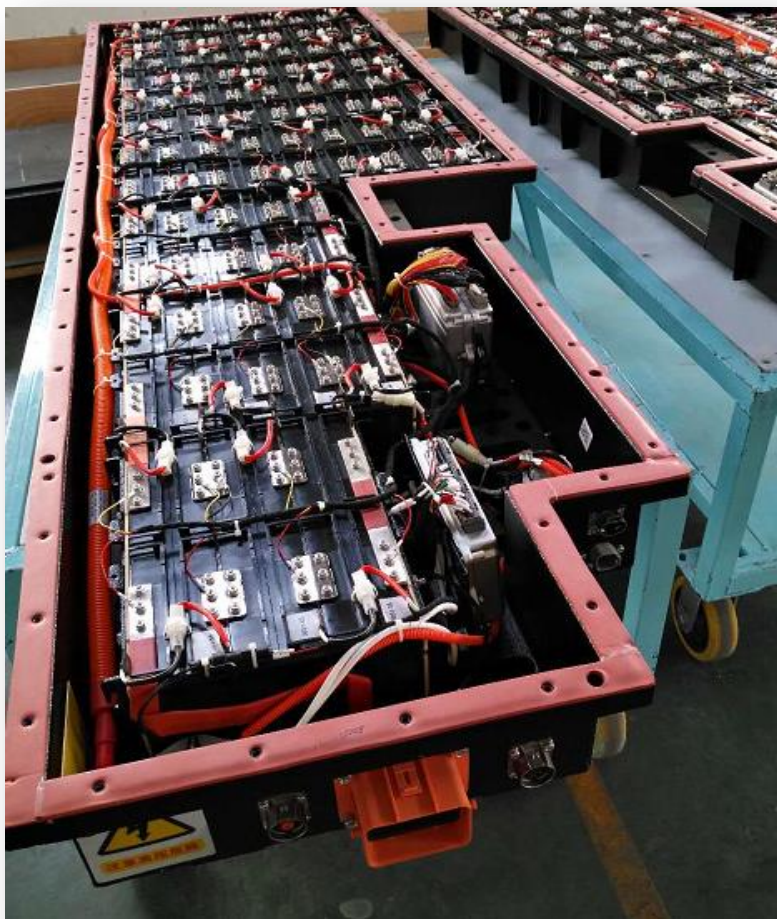
# RT360 Series Success Story



- **Country:** India
- **Application:** Electric vehicle chassis wiring harness
- **Product:** RTS/AT2P/ATP2P



# RT360 Series Success Story



- **Country:** China
- **Application :** Communication interface for power battery pack
- **Product:** RT 16-19, AT 6PIN





# RT360 Series Success Story



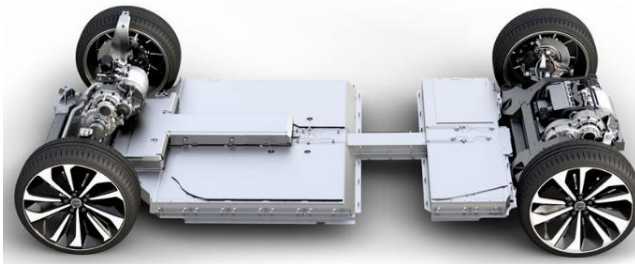
- **Country:** China
- **Application :** AC/DC charger for electric off-road motor
- **Product:** RT 4P, 9P & RTOW 10 P



# RT360 Series Success Story



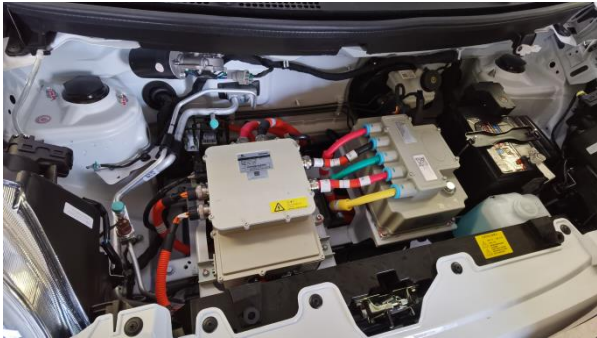
- **Country:** China
- **Application :** DC/DC charger for EV Car
- **Product:** RTS 10-6 & RT 12-8



# RT360 Series Success Story

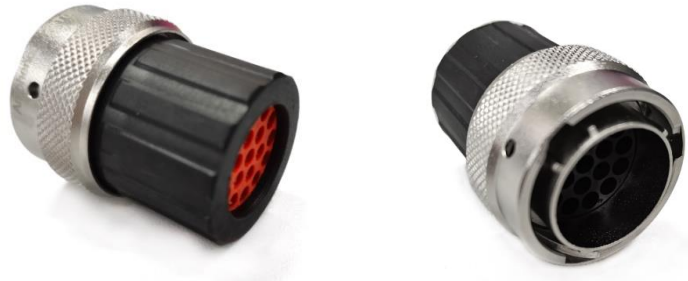


- **Country:** China
- **Application :** 3 in1 charger (PDU, OBC, DC/DC) for EV Car
- **Product:** RT 12-2, 12-4, 12-8, 14-3,14-4



# RT360 Series Success Story

- **Country:** China
- **Application :** Motor low voltage signal line
- **Product:** RT 16-19



# RT360 Series Success Story



- **Country:** China
- **Application :** Electric motor control system
- **Product:** RTHP



# RT360 Series Success Story



- **Country:** China
- **Application :** Battery pack
- **Product:** RTHP6161



# RT360 Series Success Story



- **Country:** China
- **Application :** High-voltage board for EV
- **Product:** RTHP16-1/RT-1619/RT-164/RT-144



# RT360 Series Success Story

- **Country:** China
- **Application :** Motor controller
- **Product:** RTHP16-1



- **Country:** China
- **Application :** Storage battery
- **Product:** RTHP16-1

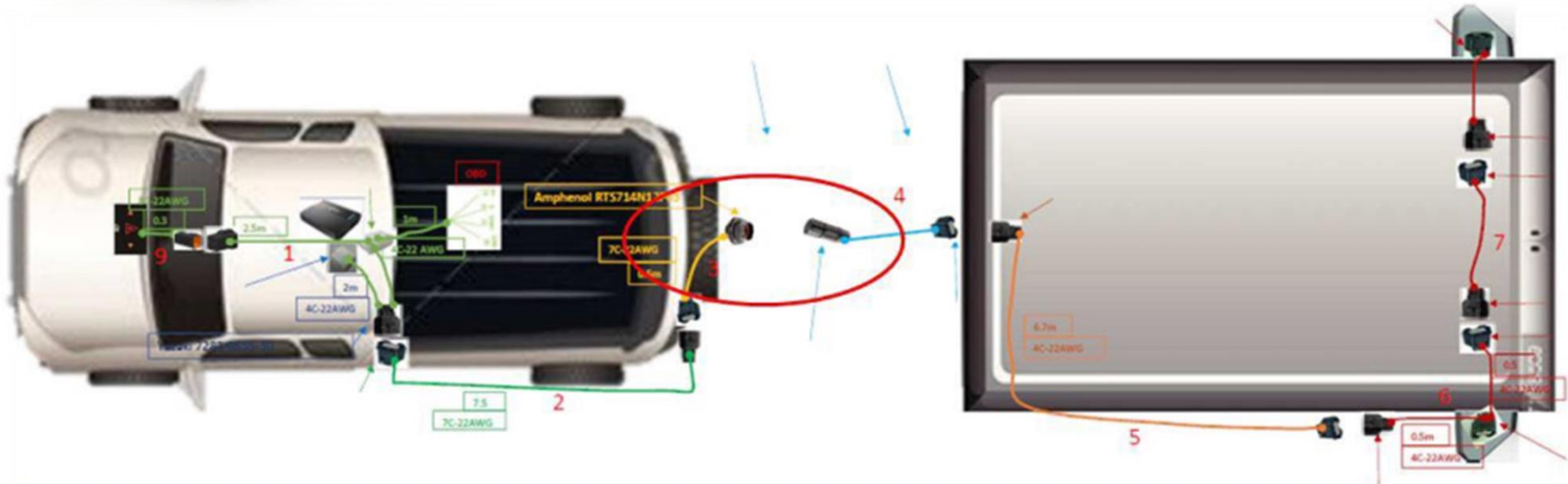




# RTS Series Success Story



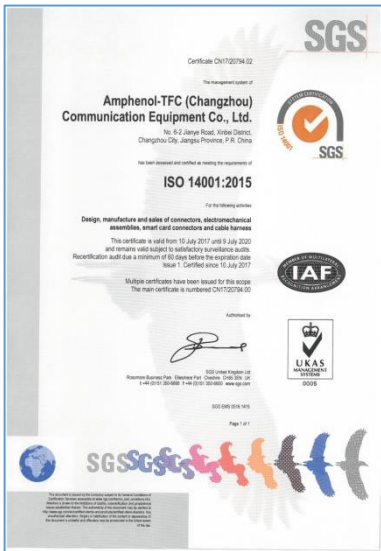
- **Country:** China
- **Application:** Automotive Monitoring Systems
- **Product:** RTS 14-12



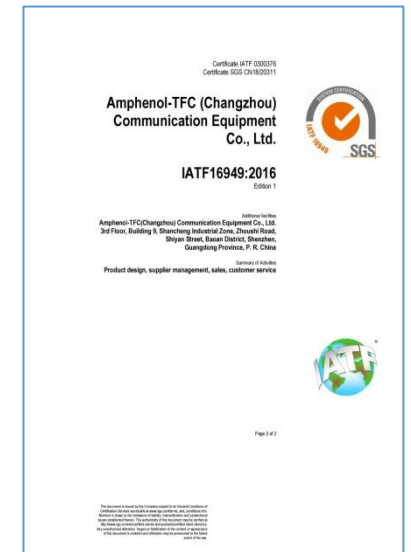
# Quality System Certification



**IATF 16949**



**ISO 9001 &  
ISO 14001**



# AIIO China Main customers



RENAULT



北汽集团  
BAIC GROUP



上汽集团



CATL

E-POW 亿能电子

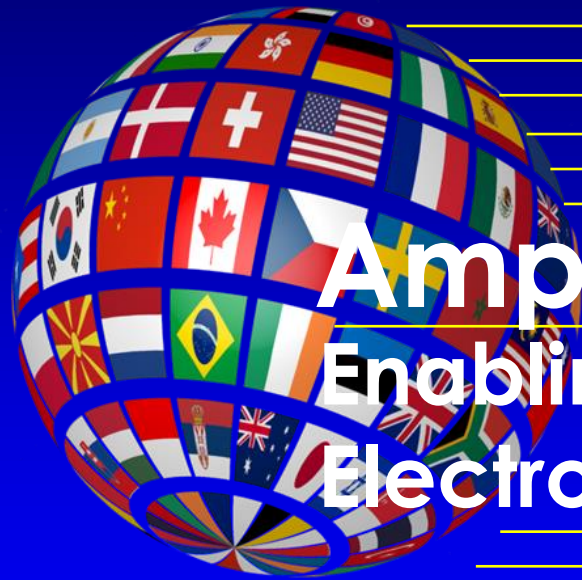


KOMATSU



# AIO China Main customers





**Amphenol**  
**Enabling the**  
**Electronics Revolution**