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### HEAD OFFICE | R&D CENTER



SEP. 2012







🌍 Dong-Ah

## Message from CEO

Dong-Ah was first founded in 1975 and has grown up to be a leading manufacturer of automotive electrical components, with Dong-Ah ElectricEquipment Co., Ltd. and Dong-Ah Electric Components Co., Ltd. formally being established in the 1980's to comply with the rapidly growing automotive industry in Korea.

However the management and employees, are not satisfied with current status and promise that we will do our best to supply you with the best products by ceaseless efforts toward creativity and challenge toward the 21st century.

### For this, all of us will;

### Firstly, do maximize R&D capability by mulitple technical collaboration

We have already been utilizing advanced technology under technical assistant agreements with Micron, Shindengen and Calsonic in Japan and Gear Tech in Switzerland and we will supply you with only reliable products based on best technology and know-how accumulated during the last 30 years.

### Secondly, do our best to diversify our market from domestic to overseas.

With the experience of success in Korea, we are expanding our markets especially in North America and Europe.

### Finally, eastablish Zero-Defect Quality Assurance System.

Awarded TS16949, Single PPM under the slogan "Quality is the Value not the Price", we are on the way to set up the best quality products with intensive care for aftersales services.

To keep these promises, all members of Dong-Ah will demonstrate endless intention and mootivation for creativeness and challenge. We will think in your position from the development to production, delivery and aftersales service to meet your demands.

Thanks again for your interest in Dong-Ah and thanks for your time to understand our company and our products.

President Woo-Yong Lee

# History

2011	UL Certificate of
2010	UL Certificate of
	VED Certificate c
	PV-Anschlussdo
2007	Received the \$10
	Established Don
2003	TS16949 CERTIF
	R&D Center mov
	Award SINGLE F
	Established Woo
2000	Awarded an Ap
	achievement fro
	Awarded an Ap
	NATIONAL TAX
	Technical affiliat
1999	Awarded an Ap
	FINANCE AND E
1998	Awarded the be
	by THE MINISTI
1997	Started exporting
	IS09001 CERTIF
1996	IS09002 CERTIF
	Awarded the first
1995	Technical affiliat
1991	Trade permissio
1990	Technical affiliat
1989	Established Don
	Established Don
	Technical affiliat
1987	Trade permissio
	Established Don
1986	Established Don
1975	Founded Dong-A



- Compliance(N0.122210-E343469) Pv-Connector
- f Compliance(NO.122210-E336909) Photovoltaic Junction Box
- of conformity with factory surveillance(NO.40031344)
- ose, Pv-Connection box(VDE REG.\_Nr. D534)
- 0 Million Export Tower Award from the Korean government
- ng-Ah AMERICA(USA)
- FICATION(DQS-GmBH)
- ved into a New H/Q Building(in Gi-heung)
- PPM by the president of the Republic of Korea(2000-3)
- onam(CHINA)
- ppreciation plaque for excellent industrial accident prevention om THE PRIME MINISTER
- ppreciation plaque as truthful tax-payer from THE MINISTER OF ADMINISTRATION
- tion with GEAR TECH GmbH, SWITZERLAND
- ppreciation plaque of truthful tax-payer from THE MINISTER OF ECONOMY
- est prize of the 100PPM achievement with quality innovation supervised TRY OF INDUSTRY AND ENERGY
- ng control head for LT project of DAEWOO MOTOR POLAND
- FICATION(KMA-QS/QSC60228)
- FICATION(KMA-QS/QSC60228)
- prize in the grade inspection supervised by HYUNDAI MOTOR Co., Ltd.
- tion with KOWA/CALSONIC Industry Co., Ltd. JAPAN
- on granted to Dong-Ah Electric Components Co., Ltd.(NO.142614)
- tion with SHINDENGEN ELECTRIC Co., Ltd. JAPAN
- ng-Ah Precision Industry company
- ng-Ah Electric Components Co., Ltd.
- tion with MICRON ELECTRIC Co., Ltd. JAPAN
- on granted to Dong-Ah Electric industry(NO.198987)
- ng-Ah Electric Equipment Co., Ltd.
- ng-Ah Electric Industry
- Ah Corporation

# **Research & Development Investing Today for Tomorrow**"



# **Quality Management**

## Superior product quality bring customer satisfaction

Dong-Ah will continue to do its best to provide maximum customer satisfaction through constant quality innovation.



ISO-14001 Gong-Ju korea Plant

# **Environmental Management & Vision** Our future is based on clean natural environment Dong-Ah develops environment-friendly products and minimize discharge of pollutants

Activation of Overseas **Business Development** New Products



ISO-14001 Rongcheng, China Plant



TS-16949 Gong-Ju korea Plant



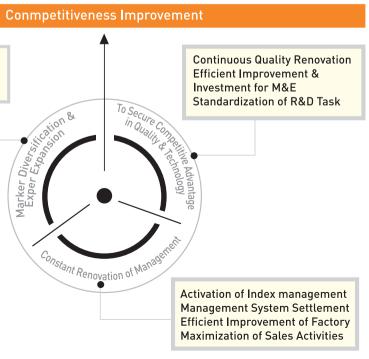
ISO-14001 Seoul korea Plant



Rongcheng, China Plant



TS-16949 Shanghai, China Plant



# HVAC CONTROL HEAD

HYUNDAI

## Application

Controlling the vehicle's interior temperature condition, blower speed and volume

## **End Customer**





# FATC

V

## Feature

- Full Automatic Temperature Control
- CAN (Controller Area Network)
- LIN (Local Interconnect Network)

## Audio & Navigation

### Feature

- RADIO+CDP/MP3+IPOD
- NAVI+BLUE TOOTH
- DivX, DMB
- RAER VIEWER



## SATC

### Feature

- Semi Automatic Temperature Control
- Contact type

## Audio

### Feature

- RADIO+CDP(CDC)/MP3+IPOD
- **BLUE TOOTH**



## MTC

## Feature

- Manual Temperature Control
- Cable type

## Active Rear Viewer System

## Feature

- Hidden camera
- EMI/ESD protection
- Motor lock protection
- K-Line

# AUDIO & NAVIGATION / REAR VIEWER SYSTEM

## Application

Audio & Navigation & Rear Viewer of vehicles End Customer









# MOTOR SPEED CONTROLLER

## Application

Heater and A/C blower motor speed control

### **End Customer**





# FET

## Feature

 blower motor application (FATC blower SPEED Control)

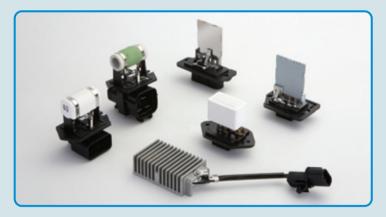
## HIM Actuator

### Feature

- Low operating noise
- Module package(Actuator + Resistor)

HYUNDAI

Low cost



## Resistor

### Feature

- Blower Motor Application
   (3 step , Hi speed fuse,Ceramic case)
- Cooling fan Motor Application
   (2 step Hi,Low)
- Fuel Pump Motor Alpplication (2 step)



## Cooling Fan Motor Controller

## Feature

- PWM type (Pulse Width Modulation)
- Over/Under voltage protection
- Over temperature protection
- Soft start
- Motor lock protection (Diagnosis output)

## **HVAC DC Actuator**

### Feature

- Low operating noise
- Increase door accuracy
- Slim & Light size
- Low cost

## HEATER FOR INSIDE OF VEHICLE PTC Pre Heater

## Feature

- Auxiliary heating until the coolant warms fully in diesel & HV vehicles.
- Prompt heating when engines start.(Provide comfortable driving condition)

# HVAC ACTUATOR

## Application

For actuating the damper operation of vehicles climate contol system
End Customer









# HVAC ACTUATOR & EPB ACTUATOR

## Application

For actuating the damper operation of vehicles climate contol system **End Customer** 





## HVAC DC Actuator(Compact/Dual)

### Feature

- Low operating noise
- Increase position accuracy
- Compact size
- Easy mounting

## HVAC Stepper Actuator

### Feature

- Increase life cycles
- Increase position accuracy
- Small size



## EPB Actuator (Electronic Parking Brake)

### Feature

- Low operating noise
- Robust Design
- Water Proof Design
- Low cost



### Feature

• Effective Heat Sink structure in Thermal Emission

HYUNDAI

- "C"-Terminal Alternator
   Voltage Regulator
- Applying polyphenylene sulfide

## Rectifier

### Feature

- Effective heat radiation maximization through heat sink
- Effective heat-excess minimization through maximizing the radiating area
- Diode Soldering Type

## **Regulator** / Rectifier

### Feature

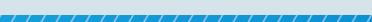
### Regulator (For BUS)

- PCB Type Applying Urethane filler
- Effective Heat Sink structure in Thermal Emission
- Applied ferrite for noise prevention
- "E" terminal vehicle direct assembly

### Regulator/Rectifier(For Moeor Cycle)

- Metal PCB Type
- Appluing urethane and ceramic fillers
- Effective Heat Sink structure in Thermal Emission

10 Dong-Ah



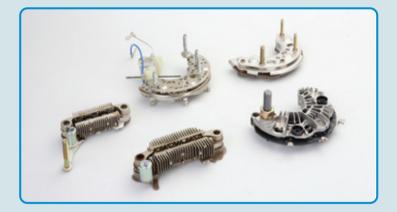
# **REGULATOR & RECTIFIER**

Application

Regulating the reguar boltage by installation inside alternator End Customer









- Regulator & Rectifier integrated
- Anodized heatsink surface
- Heat-resistant harness

# SENSOR

## Application

For transmitting date to ECU to decide the automatic speed change timing by sensing the revolving speed of auto transmission with mounted to automobile transvission case

End Customer









## Sensor

### Feature

- 1 5Th Auto Transmission Speed Sensor
- Pulse Generator(Hall IC type)
- Crank Shaft Position Sensor
- 6Th Auto Transmission Speed Sensor

## Electronic Suspension Control

### Feature

- 1 Sensor Cluster (Sensors for ESC systems control)
- Height Sensor (Measure the vehicle height)
- SI-ECU (HID Head lamp leveling control)

## EPB: Electric Parking Brake

### Feature

Principle of Operation: Actuator assembly locks rear caliper assembly as it is motorized by electric signal



## EST TCCU / AICM

### Feature

### EST TCCU

- Electric Shift Transmission Transfer Case Control Unit
- K-line or CAN
- Motor position control

### **2** AICM

(Electric vehicle HVAC control module)

## Seat Warmer ECU

### Feature

- Seat temperature controller
- Status & Error massage display

## Active Headrest Solenoid & Sensor

### Feature

- 1 Active Headrest Solenoid
- Solenoid
- **2** Active Headrest Sensor
  - Rear impact sensor (Mechanical type)

# SENSOR

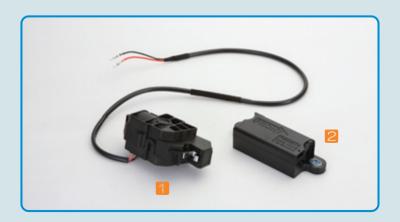
## Application

For transmitting date to ECU to decide the automatic speed change timing by sensing the revolving speed of auto transmission with mounted to automobile transvission case

## End Customer







# **BRUSH HOLDER & WIRE HARNESS / PV-JUNCTION BOX**

## Application

## End Customer





## Brush Holder

### Feature

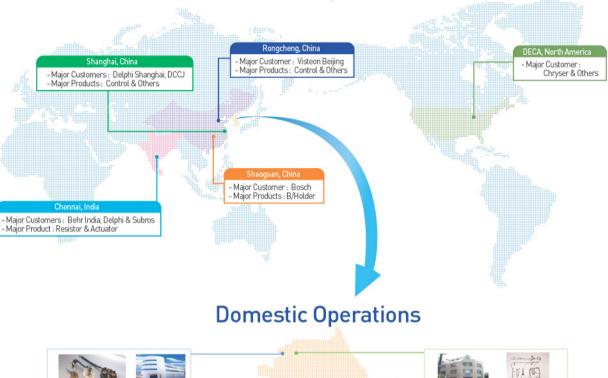
- Metal or bearing type available to the using torque value
- Insulation plate or plastic injection type of brush card available

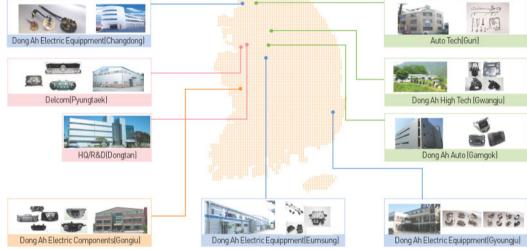


## Wire Harness

### Feature

- Connectors available to variable options
- Easy installation using brackets







## **PV-Junction Box**

### Feature

- UL Certification (N0.122210-E336909) (600VDC, 25A)
- VDE Certification (VDE REG.\_Nr.D534) (1,000VDC, 20A)
- Bypass Diode (45V,40A)

## **Overseas Operations**