Control Cable By connecting parts of the car it transmits certain amount of physical energy for driving, maintenance, and operation of the car.

Parking Brake Cable

SPECIFICATION

- Break Load of Inner Wire : Min 700kg
- Load Efficiency : Min 70%
- Temperature Range : -40~140℃

For the purpose of stopping the car or parking the car, by stepping on the parking pedal or pulling the parking lever it helps by fixing the disc from moving or the break that is connected to the rear end of the car. With the structure of Parking Rear is connected with Parking Front it makes it easy to connect the cable with one touch structure with high efficiency and high reliability layout of the design. Also since it is attached outside of the car it is designed with materials with high corrosion and water resistance.

Automatic Transmission Shift Cable

SPECIFICATION

- Load Efficiency : Min 75% @ 68N
- Load Lash : Max 2.5mm @ 68N
- Temperature Range : -40~140℃

Driver's seat lever and engine room's mission lever is connected to send power to work car's transmission for shifting gear, To allow easy installation, the cable is composed of one touch structure with plastic material that is light weight, with high efficiency and high reliability, For both push and pull both directions sends power through the cable not only for cars but can also be applied to industrial machinery, ships, aircrafts and military tanks.

Manual Transmission Shift Cable

SPECIFICATION

- Load Efficiency : Min 85% @ 120N
- Load Lash : Max 1mm @ 9N
- Temperature Range : -40~140℃

Driver's seat lever and engine room's mission lever is connected to send power to work car's transmission for shifting gear, To allow easy installation, the cable is composed of one touch structure with plastic material that is light weight, with high efficiency and high reliability, For both push and pull both directions sends power through the cable not only for cars but can also be applied to industrial machinery, ships, aircrafts and military tanks,

Accelerator Cable

SPECIFICATION

- Load Efficiency : Min 75% @ 10kgf
- Free State Effort : Max 60g
- End Retention : Min 120kgf
- Temperature Range : -40~140℃

Connects engine throttle valve and accelerate pedal for car's acceleration, Pushing the pedal will increase the RPM, releasing the pedal closes the valve as the spring attached in the engine throttle has the return force, Thus this smooth action is made possible with this cable, Also for easy attachment in the car it is structured and designed with one touch structure.

Hood Latch Release Cable

SPECIFICATION

- Free State Effort : Max 60g
- End Retention : Min 50kgf
- Temperature Range : -40~120℃

With a pull the handle it acts as opening of the latch of the hood, The cable connecting engine room hood latch and driver's left or right side allows the hood to open, 20 years ago INFAC was first to develop and produce hood latch cable, With light weight and price competitiveness many car makers apply our product, Also we use stainless steel for corrosion resistance for hood latch cable.

Fuel Filler Door Release Cable

SPECIFICATION

- End Retention : Min 50kgf
- Temperature Range : -40~90℃

It is a cable that function as unlocking the latch for fuel cap or for opening the trunk, It is located near the driver's seat, By pulling the handle can unlock the fuel cap or the trunk,

CABLE

Shift Lock Cable

SPECIFICATION

- Free State Effort : Max 120g
- End Retention : Min 30kgf
- Temperature Range : -40~90℃

For auto transmission cars, it acts as a safety where a driver accidently try to change gear while not pressing brake. It is a cable that acts as a safety device where without pressing on the brake you can't change the gear from P (Parking).

Key Inter Lock Cable

SPECIFICATION

- Free State Effort : Max 60g
- End Retention : Min 100kgf
- Temperature Range : -40~90℃

For auto transmission cars, it prevents accident caused by driver's carelessness, The cable works as a safety device where when gear is not located in P (parking) driver can't put in or take out the key, For easy attachment, it is structured as one touch and is made with plastic material for light weight, high efficiency and high reliability.

Flexible Shaft for Power Seat

SPECIFICATION

- Heat temperature of Core : 400℃
- Sliding Durability : 10,000회

It is a machinery cable that sends rotational power that is far from the motor, Without needing to be in the middle it helps to send power equally which allows for freedom of design, It can be used not only in electric seat, speedometer, tachometer for cars, but also for industrial machinery.

Inlet Emergency Cable

SPECIFICATION

- End Retention : Min 30kgf
- Sliding Durability : 100,000회
- Temperature Range : -30~100℃

This cable works as when prevention of random removal of electric charge and connecter is not working pull the handle to change electric charge door lock state to manual mode, INFAC is the first domestic producer and supplier of emergency release cable.

Battery Cable The battery power supply carries out the function of transferring electrical energy needed for all parts of the automobile's electric and electronic devices.

Battery Wiring Harness

SPECIFICATION

- Wire Voltage Drop : Max 0.2mV/A~0.25mV/A
- Temperature Range : -35~135℃

Between battery and generator through charge and discharge act as individual power supply for electric parts, Uses battery as power supply to power start motor when starting the car.

Ignition Cable High voltage created by the ignition coil sends high voltage to spark plug where it acts as delivering electric energy for ignition.

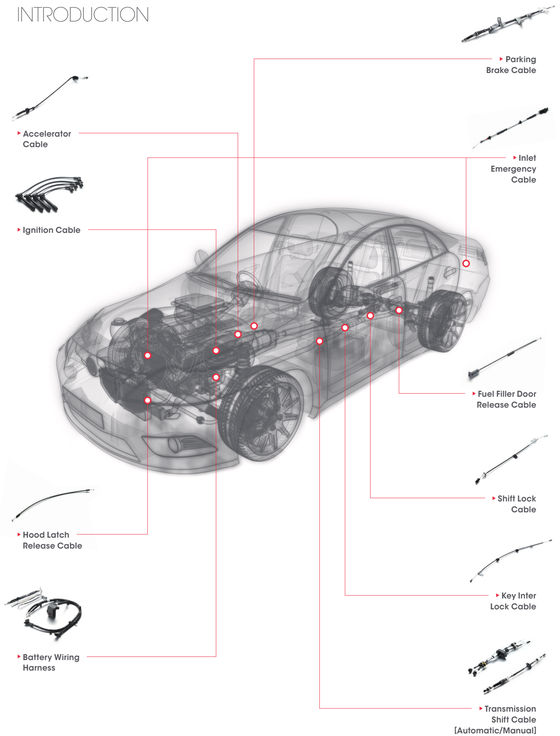
Ignition Cable

SPECIFICATION

- Cord Conductor : Wire Wound
- Resistance : 5.6KΩ/m±20%
- Capacitance : Max 170pF/m
- Temperature Range : -40~140℃

High voltage created by the ignition coil is sent to spark plug with noise prevention wires so it transfers stable electricity for ignition in the combustion chamber

CABLE
INTRODUCTION



INFAC

450, Baekjegobun-ro, Songpa-gu, Seoul, Republic of Korea TEL : 82-2-3432-3333
E-Mail : sales@infac.com

INFAC PRODUCTS

CABLE

INFAC develops and produces cables that
can send physical or electric energy to parts in the car.
For easy application most of
the cable is one touch structure and
uses plastic material for light weight, high reliability,
high efficiency, which is our pride. Not only for
cars but can also be applied to industrial machinery,
ships, aircrafts, military tanks.

PRODUCT NAME

Control Cable
- Parking Brake Cable
- Automatic Transmission Shift Cable
- Manual Transmission Shift Cable
- Accelerator Cable
- Hood Latch Release Cable
- Fuel Filler Door Release Cable
- Shift Lock Cable
- Key Inter Lock Cable
- Flexible Shaft for Power Seat
- Inlet Emergency Cable

Battery Cable
- Battery Wiring Harness

Ignition Cable
- Ignition Cable

INFAC

ACTUATOR

Motor Actuator
Uses motor and gear to drive the system.

Electronic Parking Brake Actuator [Cable Puller Type]

SPECIFICATION

- Applied Force : 1,200±150N
- Active Stroke : 90mm
- Temperature Range : -40~85℃
- Durability : 100,000 Cycle

While maintaining the existing park brake system, it uses actuator that is composed of motor and reducer to pull the parking cable that is attached to the parking brake (Cable Puller System) to get rid of existing parking lever and replaces it with a button. It is the new generation of park brake system that provides convenience and safety.

Electronic Parking Brake Actuator [Caliper Integrated Type]

SPECIFICATION

- Apply Torque : 16.6N.m
- Apply & Release Time : Max 1.0sec
- Temperature Range : -40~85℃
- Durability : 100,000 Cycle

By configuring the caliper that is attached at the rear wheel as integrated type, there is no need for separate parking cable to work the caliper. Thus parking lever is removed and is replaced with a button that has parking function that connects control system of the car for driver's convenience and safety that will be the next generation of park brake system.

Inlet Actuator

SPECIFICATION

- Rated Voltage : DC 12V
- Operating Stroke : 8~10mm
- Operating Time : Max 0.5s
- Temperature Range : -30~80℃

This is a device with an inlet actuator that functions to hold and remove the fuel charger for PHEV and EV vehicles.

Fuel Filler Motor Actuator [Door Lock Type]

SPECIFICATION

- Rated Voltage : DC 12V
- Operating Stroke : 8~15mm
- Operating Time : Max 0.5s
- Temperature Range : -30~80℃

Unlike the conventional cable system where fuel cap is to manually handled by the driver, for the driver's convenience connected to car's door lock which has motor actuator to open and close the lid of the fuel cap.

Hydraulic/Pneumatic Actuator
It functions by converting hydraulic and pneumatic energy into mechanical energy.

Variable Geometry Turbocharger Actuator

SPECIFICATION

- Rated Voltage : DC 5V
- Operating Stroke : 20mm
- Sensor Type : Hall IC
- Temperature Range : -40~180℃

To increase the output and to downsize the engine, it is mounted on the turbocharger. By using turbocharger to control the exhaust gas intake it controls the amount of compressed air, especially using the sensor attached on the top of the actuator that allows turbocharger to have precision control which satisfies exhaust gas regulation.

Waste Gate Turbocharger Actuator

SPECIFICATION

- Operating Storke : 9.8mm
- Operating Presser : 3bar
- Hysteresis : Max 1mm
- Temperature Range : -40~190℃

If the pressure of the exhaust gas passing the turbine in the engine of the turbocharger is too high it starts the west gate valve to lower the pressure. As the product has the feature to work in high temperature environment, it has the durability to withstand 180℃ and work smoothly.

Intake Manifold Actuator

SPECIFICATION

- Operating Storke : 14.4mm
- Leakage : 2cc/min at -500mmHg
- Temperature Range : -40~150℃

It is attached to Intake Manifold, which acts as air tunnel from the engine cylinder. The principle is if vacuum pressure is added moves up and down, depending on the engine's number of revolutions air absorption amount is controlled to maximize intake efficiency. It makes VIS valve and intake air to swirl and operate the vortex control valve. Has high impact and abrasion resistance that doesn't deform in high temperature, uses easy to process glass fiber resins that is already been proved to be reliable for automotive parts, given that environments and conditions are similar it can be applied in variety of fields.

Recirculation Valve

SPECIFICATION

- Operating Stroke : 10mm
- Operating Presser : -57kPa
- Temperature Range : -40~170℃

It is attached to the turbocharger module to increase engine's output. When accelerating the car turbocharger's turbine rotate at high-speed allowing inflow of high pressured air. At this state if the car decelerates the pressured air gets blocked suddenly and creates overload for the turbocharger's turbine. At this time the valve of the product is opened to protect the turbocharger by recirculating the pressure air.

Solenoid Actuator
Uses magnetic force created by the solenoid coil to operate.

Switchable Solenoid Valve

SPECIFICATION

- Operating Pressure : Max 10bar
- Switching Current : Max 2.0A
- Holding Current : Max 1.0A
- Temperature Range : -40~100℃

Attached to the inside of the air spring, depending on the valve it controls pressure inside the chamber by connecting or separating 2~3 chambers.

Air-Compressor Exhaust Valve

SPECIFICATION

- Operating Pressure : 1~21bar
- Operating Current : ≤0.5A
- Response Time : <50ms
- Leakage : Max 1cc/min

It creates compressed air with air compressor to adjust the garage which is mounted as one piece. This allows for lowering the garage with ECS system by releasing the compressed air if there is excess amount of compressed air.

ECS Solenoid Valve Block

SPECIFICATION

- Operating Pressure : Max 17.5bar
- Leakage : 1cc/min
- Sensor Accuracy : ±5%
- Temperature Range : -40~80℃

Using the pneumatic sensor method it controls the amount of air inside the electric air suspension system. With strong structure for external temperature and humidity it is built in pressure sensor with featuring pressure control rage of 17.5 bar.

Continuous Damping Control Solenoid

SPECIFICATION

- Operating Current : 0.3~1.6A
- Operating Pressure : Max 50bar
- Stroke : 0.9±0.15mm
- Hysteresis : ≤5%
- PWM Frequency : 1kHz

Controls the amount of oil inside the CDC damper to control attenuation of the damper. Depending on the current application rage precise control is possible and trust adjustment can be made with screw.

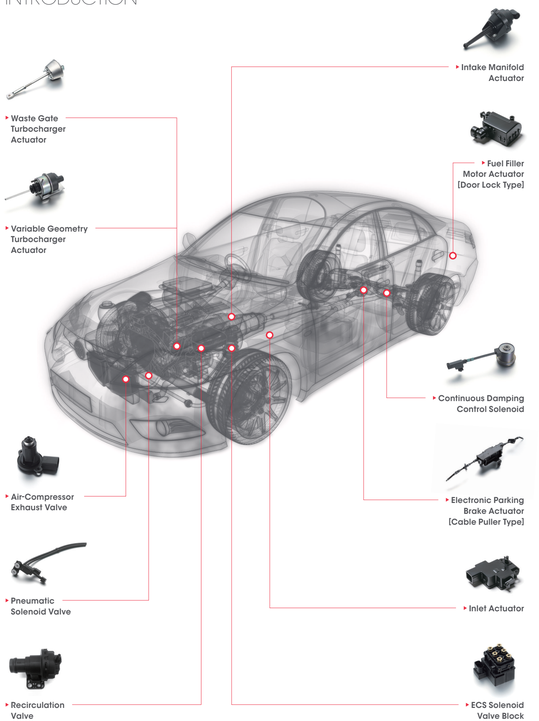
Pneumatic Solenoid Valve

SPECIFICATION

- Rated Voltage : DC 12V
- Leakage : 100cc/min at -600mmHg
- Temperature Range : -30~120℃

By controlling negative pressure it is possible to work the actuator (engine mount, EGR, 4WDHub). Inside the solenoid valve there is noise reduction, damping brackets and hose assembled in one piece it is possible to apply to variety of systems.

ACTUATOR
INTRODUCTION



INFAC

450, Baekjegobun-ro, Songpa-gu, Seoul, Republic of Korea TEL : 82-2-3432-3333
E-Mail : sales@infac.com

INFAC PRODUCTS

ACTUATOR

We develop and produce variety of
system controlled actuators for
car performance, convenience, and safety.
We can develop actuators for variety of
control method that best fits the car.
From having to apply diaphragm for
pneumatic control method.
We also have solenoid control method with
motor applied transmission control method.
Also depending on the system's demand
we have the technology to
measure pressure, stroke, and load etc.

PRODUCT NAME

Motor Actuator
- Electronic Parking Brake Actuator [Cable Puller Type]
- Electronic Parking Brake Actuator [Caliper Integrated Type]
- Inlet Actuator
- Fuel Filler Motor Actuator [Door Lock Type]

Hydraulic/ Pneumatic Actuator
- Variable Geometry Turbocharger Actuator
- Waste Gate Turbocharger Actuator
- Intake Manifold Actuator
- Recirculation Valve

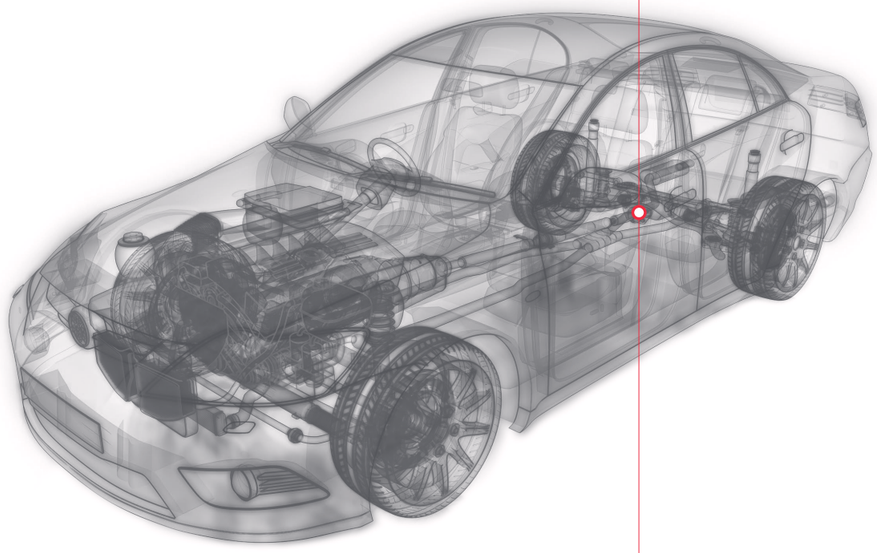
Solenoid Actuator
- Switchable Solenoid Valve
- Air-Compressor Exhaust Valve
- ECS Solenoid Valve Block
- Continuous Damping Control Solenoid
- Pneumatic Solenoid Valve

INFAC

BMA PLASTIC PARTS
INTRODUCTION

Battery pack housing is composed of lithium series or parallel of cells into a saved part, it protects cells from outside shock and senses each cell's voltage and temperature to increase charging efficiency through BMS (Battery Management System) and prevents over charge through the system for stable energy supply.

Battery Cell Case [2P10S], Electric Vehicle



Battery Cell Case [2P6S], Electric Vehicle

Battery Cell Case, Hybrid Electric Vehicle

BMA PLASTIC PARTS

Parts for Electric Vehicle It is electric energy stored automobile case. Composed of many battery cell modules that is composed of series and parallel of cells to supply high voltage electric energy.

Battery Cell Case [2P10S], Electric Vehicle

SPECIFICATION

- Temperature Range : −40~85℃
- Flammability Rating : V0~V1
- Heater Resistance : 23~25.8Ω

Lithium battery for electric cars and series and parallel of saved part. Through design maximizes battery efficiency, and through heat manage system it senses voltage and temperature. Paragraph / it is a safe product with overcharge prevention sys–tem. Save cell: 20

Battery Cell Case [2P6S], Electric Vehicle

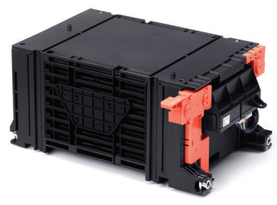
SPECIFICATION

- Temperature Range : −40~85℃
- Flammability Rating : V0~V1
- Heater Resistance : 23~25.8Ω

Lithium battery for electric cars and series and parallel of saved part. Through design maximizes battery efficiency, and through heat manage system it senses voltage and temperature. Paragraph / it is a safe product with overcharge prevention sys–tem. Save cell: 12

Parts for Hybrid Electric Vehicle Composed of many battery cells connected by series and parallel structure allows high voltage electricity and electric energy to be saved in hybrid vehicle part case.

Battery Cell Case, Hybrid Electric Vehicle



SPECIFICATION

- Temperature Range : −40~85℃
- Flammability Rating : V0~V1

Hybrid vehicle lithium battery stored as series of connected cells. Through design it maximizes battery efficiency and with heat management system it senses voltage and temperature of the cell. Paragraph / it is a safe product with overcharge pre–vention system.

BMA
PLASTIC PARTS

PRODUCT NAME

Parts for Electric Vehicle

Battery Cell Case [2P10S], Electric Vehicle

Battery Cell Case [2P6S], Electric Vehicle

Parts for Hybrid Electric Vehicle

Battery Cell Case, Hybrid Electric Vehicle

INFAC

INFAC

450, Baekjegobun-ro, Songpa-gu, Seoul, Republic of Korea TEL : 82-2-3432-3333
E-Mail : sales@infac.com

Smart Key System Antenna Performing system connection with door lock and unlock of cars and starting the car by implementing Antenna Keyless.

LF Antenna

SPECIFICATION

Operating Frequency : 125kHz
Impedance : 250~280uH±10%
Temperature Range : -30~80℃

Antenna applied in the smart key system is low frequency between the car and the driver to communicate the location of the driver within certain range and automatically controls the door. Its purpose is to locate the driver thus it can be attached inside or outside the car and the shape can vary depending on the car.

Body Control Module Antenna

SPECIFICATION

Impedance : 50Ω
Temperature Range : -30~80℃

Antenna applied in the smart key system uses 315 ~ 433 MHz that can remotely control door wirelessly between the car and the driver.

Active Antenna Built in antenna with miniaturization and low noise amplifier.

Combined Shark Fin Antenna

SPECIFICATION

Gain : AM_-7~11dB / FM_16~20dB
GPS_30~34dB / DMB_22~26dB
Output VSWR : LTE_2.5:1
Impedacne : GPS_DMB_LTE 50Ω
Temperature Range : -40~85℃

Designed and configured as an integrated antenna for variety of antennas (radio, DMB, GPS, LTE, SDARS, etc.) to allow variety of multimedia services in the car.

Combined Pole Antenna

SPECIFICATION

Gain : AM_2~6dB / FM_5~9dB
GPS_29~33dB / DMB 18~22dB
Output VSWR : LTE_2.5:1
Impedance : GPS_DMB_LTE 50Ω
Temperature Range : -40~85℃

It is a passive antenna that receives signal for radio (AM/FM), GPS and DMB. AVN system is applied in the high end cars and depending on the region receiving service band can vary.

ANTENNA + RF CABLE

180mm Radio Pole Antenna

SPECIFICATION

Gain : AM_-1~3dB / FM_5~9dB
Impedance : FM_75Ω
Temperature Range : -40~85℃

Active antenna that is attached outside the car has increase performance of reception by reducing the pole length by 180mm and by applying low noise amplifier to the passive antenna that receives signal for radio (AM/FM).

400mm Radio Pole Antenna

SPECIFICATION

Gain : AM_0dB / FM_8dB
Impedance : 75Ω
Temperature Range : -40~85℃

Active antenna that is attached outside the car has increase performance of reception by increasing the pole length by 400mm and by applying low noise amplifier to the passive antenna that receives signal for radio (AM/FM).

Glass Antenna

SPECIFICATION

Gain : AM_-3~1dB / FM_6~10dB
Impedance : 75Ω
Temperature Range : -30~70℃

Inside the car active glass antenna has improved performance of low noise amplifier and reception to receive signal for radio (AM/FM). Depending on the design of the car glass pattern can vary.

Smart Antenna System

SPECIFICATION

Gain : AM_7~11dB / FM_16~20dB
GPS_28~32dB / DMB_22~26dB
Output VSWR : V2X, LTE_2.5:1 TPMS&BCM 4:1
Impedance : DMB,LTE,GPS,TPMS&BCM,
V2X 50Ω / FM 75Ω
Temperature Range : -40~85℃

Smart antenna is a built in one piece between antenna and the module. It is a smart integrated antenna for AM/FM, DMB, TPS&BCM, LTE, GPS, V2X that has 8 bands for multimedia service and for the driver's convenience.

Feeder Cable Assembly It functions as a coaxial cable that carries radio frequency.

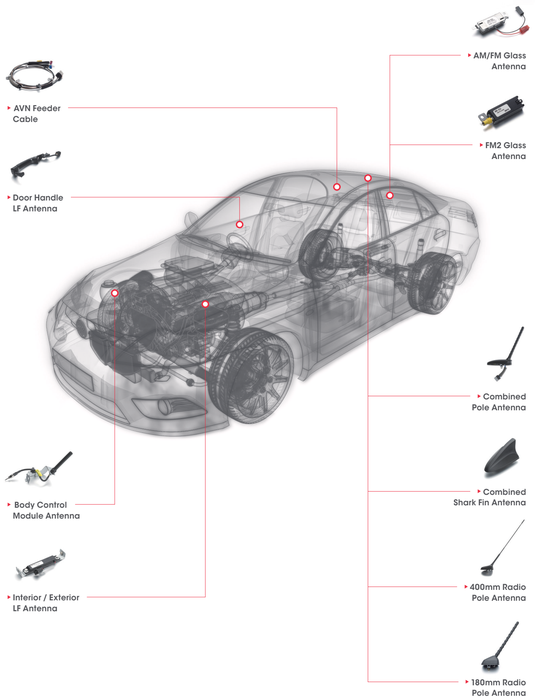
AVN Feeder Cable

SPECIFICATION

AM / FM : 1.5C ~2V
DMB, GPS : 1.5DS
HSDPA, XM : 1.5DS
Impedance : 50Ω / 75Ω

Transmission cable is to deliver RF signal through the wire to the wanted destination. Especially in the car received by the antenna various electrical signals (radio, DMB, GPS, SDARS, LTE, etc.) sends to the receiver (audio, AVN, etc.) efficiently. Uses 316 series in order to minimize the frequency losses.

ANTENNA + RF CABLE
INTRODUCTION



INFAC

53, Saneop-ro 155beon-gil, Gwonseon-gu, Suwon-si,
Gyeonggi-do, Republic of Korea TEL : 82-31-294-4700
E-Mail : saleselecs@elecs.infac.com

ANTENNA + RF CABLE

PRODUCT NAME

Smart Key System Antenna	Active Antenna	180mm Radio Pole Antenna	Glass Antenna	Feeder Cable Assembly
LF Antenna	Combined Shark Fin Antenna	400mm Radio Pole Antenna	Smart Antenna System	AVN Feeder Cable
Body Control Module Antenna	Combined Pole Antenna			

INFAC

ANTENNA

Bi-directional antenna is complexly built in for broadcasting reception for multimedia system in the car (radio, DMB, DAB, satellite radio, navigation) and ITS. Adapted for variety of cars and design Shark Fin and Pole type is used. Applied RF cable to transmit and receive signals safely to the system with low loss. It is an advantageous as it is the next generation service for e-Call and uses antenna that can connect with Autonomous safety driving system.

AVN Feeder RF Cable

Transmission cable that send out RF signal through the wire to the wanted destination, especially in the car various electrical signals (radio, DMB, GPS, SDARS, LTE, etc.) received by the antenna is sent to the receiver (audio, AVN, etc.) very efficiently. Uses RG316 series in order to minimize the losses created by the frequency.

Shell Horn
It is a Shell type warning device when in dangerous situation sends danger sign to both cars and people to prevent accident.

Φ78 Shell Electronic Horn [12V]

SPECIFICATION

Rated Voltage : DC 12V

Sound Pressure Level : 108~118dB(A)

For high end cars, soft bass tone of wind instrument sounding horn which is electric but makes no contact.

Φ78 Shell Electric Horn [12V]

SPECIFICATION

Rated Voltage : DC 12V

Sound Pressure Level : 108~118dB(A)

Horn is an essential part for drivers to send out danger signs to both the car and people.

Air Horn
It is a warning device that makes sounds with compressed air when in dangerous situation sends danger sign to both cars and people to prevent accident.

Air Horn

SPECIFICATION

Rated Voltage : DC 24V

Sound Pressure Level : 102~114dB(A)

Big trucks and buses has air compressor attached that uses compressed air horn to create loud noise.

HORN

Disk Horn
It is a disk-shaped warning device that warns the car and the people by sending out warning sign.

Φ100 Disk Electric Horn [24V/48V/80V]

SPECIFICATION

Rated Voltage : DC 24V / DC 48V / DC 80V

Sound Pressure Level : 105~115dB(A)

Disk type product that is commonly applied in commercial vehicle (24V), industrial vehicle (48V/80V) and construction equipment, which uses electric horn with a switch-type contact.

Φ100 Disk Electronic Horn [12V/24V/48V/80V]

SPECIFICATION

Rated Voltage : DC 12V / DC 24V / DC 48V / DC 80V

Sound Pressure Level : 105~118dB(A)

Disk type product that is commonly applied in passenger vehicle (12V), commercial vehicle (24V), and industrial vehicle (48V/80V). It uses electric horn without contact and has long durability.

Φ75 Disk Electronic Horn [12V]

SPECIFICATION

Rated Voltage : DC 12V

Sound Pressure Level : 108~118dB(A)

Disk type product that is used in passenger and commercial vehicles. It uses electric horn with long durability and it doesn't use contact.

Φ75 Disk Electric Horn [12V]

SPECIFICATION

Rated Voltage : DC 12V

Sound Pressure Level : 108~118dB(A)

It is a disc type horn for commercial and industrial vehicles that uses contact. Due to the tone, it can be used as a mini horn as a burglar alarm.

Φ85 Disk Electric Horn [12V]

SPECIFICATION

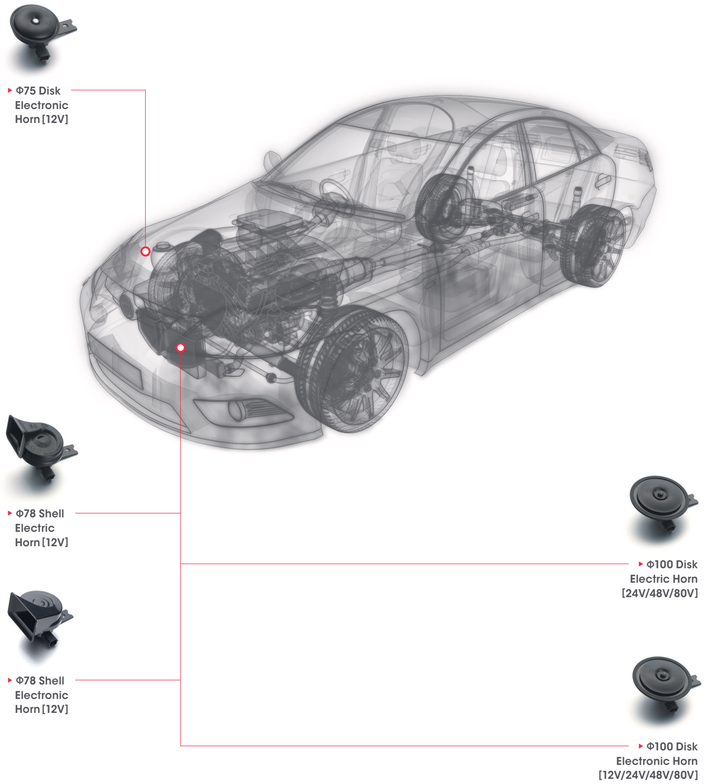
Rated Voltage : DC 12V

Sound Pressure Level : 108~118dB(A)

In general, mostly used standard product for commercial and industrial vehicle is contact switch disc type horn.

HORN
INTRODUCTION

Horn structure both electronically and electrically through
warning sound sends signal to both cars and
people to alert danger to prevent accident from happening.
In the past electric horn relied on durability and
noise to let people feel discomfort.
Improved electric horn reduced the influence and reduced the noise.



INFAC
7, Yongwon 1–gil, Yongwog–ri, Seongnam–myeong, Dongnam–gu, Cheonan–si,
Chungcheongnam–do, Republic of Korea TEL : 84–41–723–2323
E–Mail : saleshorn@horn.infac.com

INFAC PRODUCTS

HORN

PRODUCT NAME

Shell Horn	Air Horn	Disk Horn		
Φ78 Shell Electronic Horn [12V]	Air Horn	Φ100 Disk Electric Horn [24V/48V/80V]	Φ100 Disk Electronic Horn [12V/24V/48V/80V]	Φ75 Disk Electric Horn [12V]
Φ78 Shell Electric Horn [12V]			Φ75 Disk Electronic Horn [12V]	Φ85 Disk Electric Horn [12V]

INFAC