# LCD 2-WAY

Remote Start & Security System

**MODEL: KR-8800**

## Operation & Installation Manual


Kopel

# Remote Start & Security System

Köpel

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| | | | |
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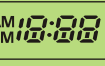
|   | Wake-up alarm setting ON |   | Time, Temperature Program menu |
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# Alarm Functions

## Door lock(Arming)/Panic


Close the door | Press the button | Light 1time | Door lock and Arming (After arming, shock sensor is operated 20sec later) | Display

- When turned Bypass ON, If door is open after 5 - 45 seconds when you arm by press door button, you will hear 3 chirps.(Arm delay time setting : Program 3-8, Bypass ON/OFF: Program 4-4, Arm cancel mode at door open: Program 4-8)


Display
(Remote engine start can't be operated if the door is opening.)

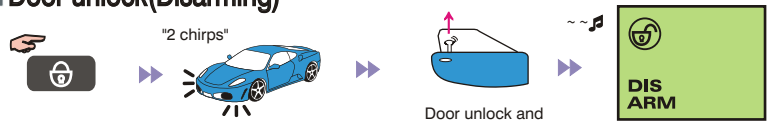
PANIC

Press the button for 2sec | Siren operation for 30sec

<Emergency siren function>
In case of emergency, you can let people know the emergency status by flashing the parking lights and siren.

- **No chirp mode:** If you press the button sequentially(Double click), door lock/unlock is operated without chirps.

## Door unlock(Disarming)




Press the button | Light 2 times | Door unlock and Disarming | Display

- If you don't open the door within 30sec after the disarming, the vehicle enters alarm mode again with the door is automatically locked.

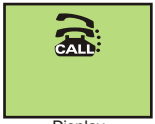
## Trunk unlock(Car finder)


Press the button for 2sec | Trunk unlock | Display

- When you unlock the trunk by the transmitter in the arm mode, the vehicle enters disarm mode. If you don't open the door within 30sec, the vehicle enters arm mode again.
- If you connect trunk pin switch, disarm is continually kept.
- **Car finder function:** If you press the trunk button for 1sec in arm mode, you can confirm current status of vehicle with "Beep" sound and light.

## Driver calling(Knock)


Knock the driver call sensor on the windshield of the vehicle.




Display

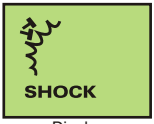
- After arm delay time(5 - 45 seconds), this function is operated after 20 seconds. (Arm delay time default: 5 seconds, See the table 3-8.)

Driver calling is stopped at the remote engine start.

## Shock sensing

Shock sensing

The siren output for 30sec (Weak shock: Warning)




Display

Press the button to stop the siren

- After arm delay time(5 - 45 seconds), this function is operated after 20 seconds. (Arm delay time default: 5 seconds, See the table 3-8.)
- Shock sensing OFF: If you want shock sensor is OFF(1time) you need to press the trunk button 2times in arm mode.
  (Two stage sensor OFF : First time=weak shock, second time=strong shock)
- The sensor detects external shock either as high level or as low level. You can adjust the sensitivity through testing.

Shock sensing is stopped at the remote engine start.

## When input is triggered

When the input is triggered in the arming mode

The siren output for 30sec


Door trigger


Trunk trigger


Hood, brake, IG trigger

- The siren will repeatedly output 4times for each 30sec if the door is opened.

Press the button to stop the siren

## Checking the vehicle status

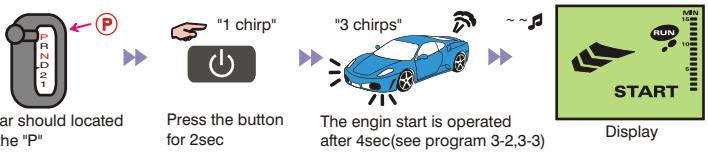
Press the button for 1sec

LCD back light ON


Current status of vehicle is marked by icon


- **ERR** This icon is turned on when it can't receive reception after operate transmitter.

## Automatic vehicle



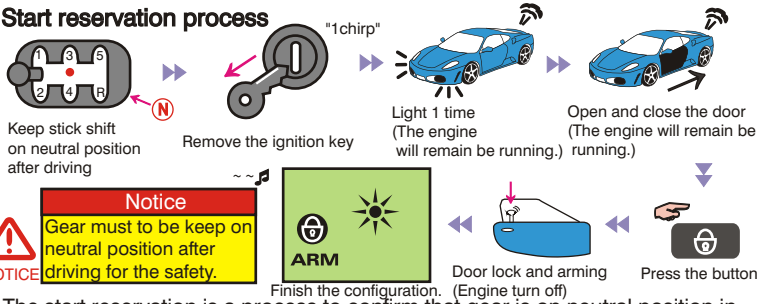

- Light blink for 15 minutes after remote start and the engine start turn off automatically after the 15minutes.( Progress time is marked to icon.) The buzzer sound is outputted from the transmitter when the remaining start time is 5 min. (If you want change start run time, see 3-1 of the program menu.)
- Engine start turn OFF: Press the button twice consecutively(Double click), the start turn OFF with 2 chirps in the vehicle.
- Start condition: If you want to do remote engine start, all sensing(Door, trunk, brake, hood) must be normally operated. If start isn't operated at once, starting repeatedly your car 4 times by increase each 0.3seconds.

## Reservation of stick shift vehicle(Auto process)

Stick shift vehicle must keep on neutral position after driving.

Remote engine start's function after reservation process is the same as the case of automatic vehicle.

### * Start reservation process




- The start reservation is a process to confirm that gear is on neutral position in case of the stick shift vehicle.
  You can not use remote start without guarantee of neutral.
- In case of canceling the reservation
  -In case of remove the ignition key when doors are opened after driving.
  -In case you open the door after the reservation is completed.
  (The reservation is canceled for the safety because we can not guarantee that the gear is the neutrality.)

## Reservation of stick shift vehicle(Manual process)


Keep stick shift on neutral position after driving

Press the button for 1sec.

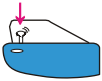
Remove the ignition key

Open and close the door (The engine will remain be running.)

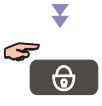

Display

"1 chirp"

At the manual reservation, engine start will turn off 2mins after lock the door if turbo function is setting ON.



Door lock and arming



Press the button

Press the button 2 times whenever you want that start turn off.

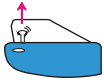
See 10page about the turbo function.

- Factory set = Auto reservation
  If you want to use the manual reservation process you must change to OFF 1-5 of the program menu.

## Getting on the vehicle during remote start

A remote start is operating

Press the button



Door unlock and Disarming

Getting on the vehicle (The engine will remain be running for 1minutes.)

**Notice**

1. You must notice not to turn the ignition key to an "ST" location in getting on the vehicle during remote start.
2. Beware that start turn off within 1min if you not turn the ignition key to an "ON" but turn to an "ACC"

NOTICE

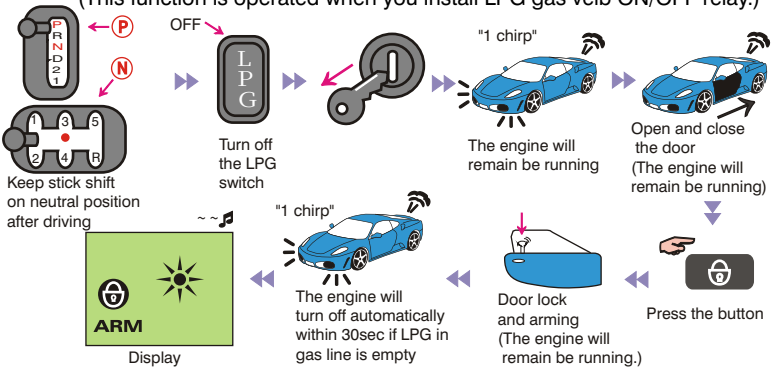
Driving


Turn on the ignition key within 1min to an "ON" location

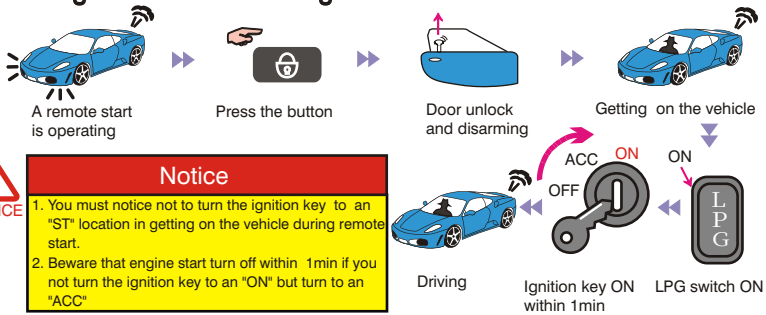
- Engine start safety mode: If you press the brake pedal at the remote start, engine start program will be completed with engine turn off.
  (This function will be only operated in case brake sensing wire is connected.)

## Start reservation of the LPG vehicle (Optional)

-In summer? The reservation is the same as normal vehicle kinds's.
-In winter? Remaining gas in gas line is frozen if the temperature falls below the zero. For prevention it, you had better do as follows.
(This function is operated when you install LPG gas velb ON/OFF relay.)




## Getting on the vehicle during LPG start



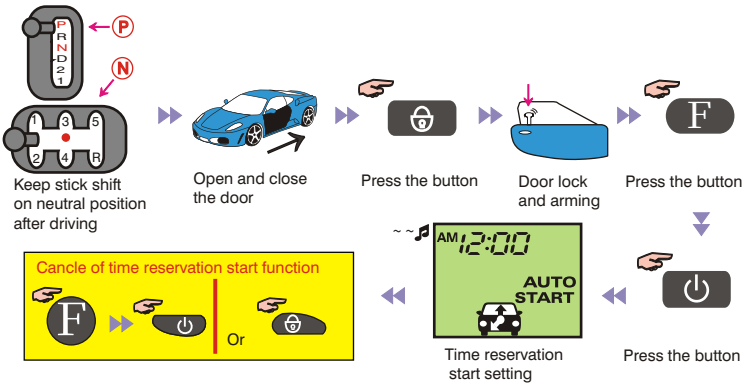

NOTICE

**Notice**

1. You must notice not to turn the ignition key to an "ST" location in getting on the vehicle during remote start.
2. Beware that engine start turn off within 1min if you not turn the ignition key to an "ON" but turn to an "ACC"

- Engine start safety mode: If you press the brake pedal at the remote start, engine start program will be completed with engine turn off.
  (This function will be only operated in case brake sensing wire is connected.)

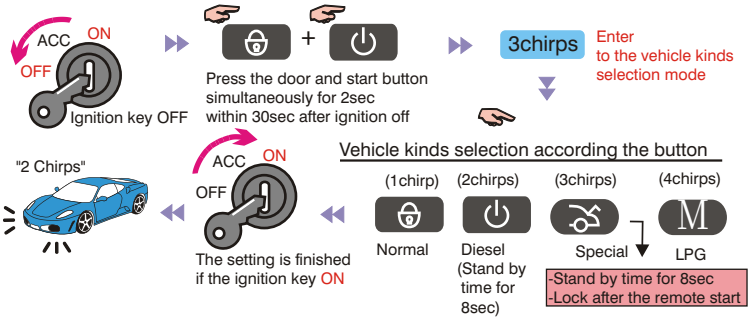
## Time reservation start setting



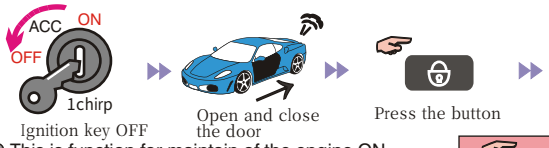

- Use the function after start time setting(See 12 page start time setting)
  This function is operated only one time after the setting for the safety.
  (It is convenient if you use in the situation which remote control isn't operated.)
  In case of the stick vehicle, you can setting only after start reservation.
- Icon turn ON, if automatic start is setting.

AUTO START

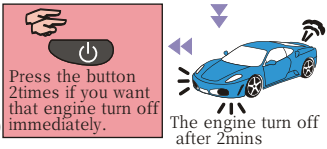
## Vehicle selection mode



## Auto turbo function




- This is function for maintain of the engine ON for 2minutes after the door is locked.
  (This is in use to aid function of the turbo vehicles)
- Turbo function ON: Set the P1-1 function to the ON in the program setting (See 17page)
- Turbo time setting : Program menu P3-7 (See 20page)



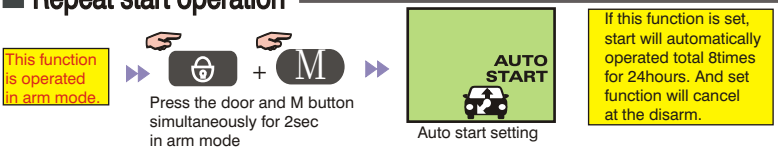

**TURBO** : This icon is turned on when turbo function is setting.

## VALET mode


(See 2-1 Digital code valet mode of 19 page )

- Use this function when you leave your car to other person that don't know how to use this transmitter.
- In the case of the valet mode, you can operate only door lock/unlock and trunk open by transmitter.
- Upper valet function is general method and Digital code valet function see the 19,26 page.

## Repeat start operation




- This function is operated each every 3 hours.
  The start time is operated for setting start time. (Default : 15 minutes.)

## Button hold


Press the button for 2sec

~ ~ "Beep"(1time)

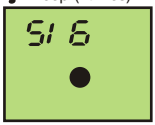

Remove your hand when HoL is marked.

- If the button hold mode is ON, F is displayed and user can operate only F & M button.
  If you want to cancel it, press the F button for 2sec one more time.( F is OFF)

## Signal check


Press the button for 4sec

~ ~ "Beep"(2times)




Remove your hand when SIG is marked.

- If the signal check mode is ON, ● is displayed and the transmitter check the communication condition by commuting with main control unit each every 60 min.
  If you want to cancel it, press the F button for 4sec one more time.( ● is OFF)
- If the signal can not receive, the ERR icon will be displayed with buzzer sound.

## Buzzer ON/OFF


Press the button for 6sec

~ ~ "Beep"(3times)

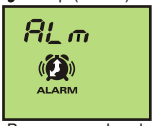

Remove your hand when bur is marked.

- If the buzzer is OFF, is displayed and the transmitter do not output any sound.
  If you want to cancel it, press the F button for 6sec one more time.( is OFF)

## Alarm ON/OFF


Press the button for 8sec

~ ~ "Beep"(4times)




Remove your hand when ALm is marked.

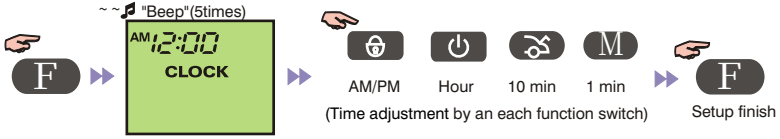
- If the alarm is ON, ALARM is displayed and the melody is outputted at setting time.
  If you want to cancel it, press the F button for 8sec one more time.( ALARM is OFF)

(See the 12 page : Alarm time setting)

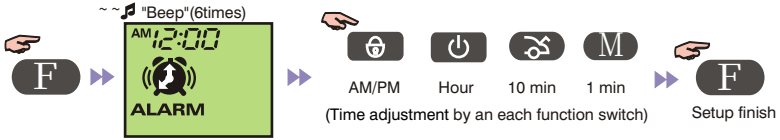
# Setting Mode

- Transmitter will return automatically to current time if you don't press the button for 10sec after setting mode.

## Current time setting

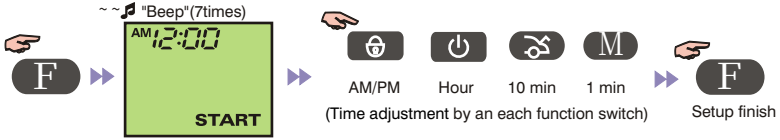



## Alarm time setting




- Setting time is inputted in memory.
- The icon ALARM is marked in transmitter when alarm is "ON".
  (See the 11 page : Alarm ON/OFF)

## Start time setting




- Set up time to need time reservation start.(Setting time will memory in the IC.)
- Set up by the transmitter when you need the time reservation start.
  (See the 9 page : Time reservation start setting)

## Timer function


Press the button for 2sec

The start of the timer operation

Press the button for 2sec again (Function finish)

- This function is convenient when confirmation of the parking time and driving time.(The timer is marked 12hours to minute.)

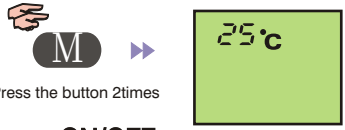
## Siren ON/OFF


Display (Siren OFF)

Siren ON: 1 Chirp
Siren OFF: 2 Chirps

- When turned siren off, sound of the shock sensor is only stopped. (The state is displayed to the LCD 2-way transmitter.)

## Temperature check




Press the button 2times

Temperature is displayed to Celsius.

C: This icon is turned on when you check the temperature.

## LCD Lamp ON/OFF


"Beep"(2times) : LCD lamp OFF
"Beep"(1time) : LCD lamp ON

Press the F and trunk button simultaneously for 2sec.

If the LCD lamp is OFF, the transmitter do not operate LCD lamp.

## Vibration mode


Press the F and M button simultaneously for 2sec.

- This icon is displayed on when vibration mode is on and buzzer off.(At the door,trunk, hood,brake,strong shock sensing)

# Convenient Functions

## Aux-1 output


AUX1

AUX-1 will be outputted for 1sec.
If you want to output time, change to 3-5 of the program menu.

(One way transmitter
: Press button 4(✳) for 2 seconds)

This icon is turned on when you operate AUX1 output.

## Aux-2 output


AUX2

AUX-2 will be outputted for 1sec.
If you want to output time, change to 3-6 of the program menu.

(One way transmitter
: Press button 4(✳) for 2 times)

This icon is turned on when you operate AUX2 output.

## Smart access mode

- If the system setting is access mode, this icon is turned on.
  (Operation method is refer to the program menu 4-6, 21page. )
  If you use this function, the transmitter battery life will be short.

ACCESS

## Convenience start


Step on the brake and press the button 2times

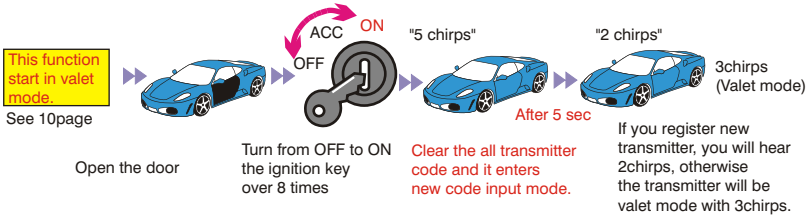
- If you step on brake and press 2times the START button when the car is starting, you can operate this function.
  If you operate this function, the car maintain starting mode for 15 minutes after get off the vehicle and operating ARM by transmitter. (If you change the program menu 3-1 start time, the convenience start time is change, too.)

## Cold & hot start

TEMP

- This icon is turned on when temperature start is setting.
  (Operation method is refer to the program menu Cold & Hot start 1-7,18 page)

## Transmitter code learning
## (The operation in the situation which the door is opened)




- This function is used when you lose transmitter or break down. You can use this function though siren is continually operated.
- The transmitter input is possible to each maximum 2pcs both one way and two way transmitter.

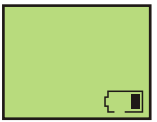
## RPM setup (Only used by the install engineer)


NOTICE: If you install in tach pulse sensing wire (CN5 yellow), you have to operate RPM setup.

- RPM setup method
  Step 1. Engine ON and maintain idling condition. (600-700RPM)
  Step 2. Set the valet mode.
  Step 3. Press the door and M button simultaneously for 2seconds, then the idling condition is memory in main control unit.
  (This data is applied at remote start.)
  Step 4. Cancel the valet mode.

## Low battery indicator

- You must adjust current time again after battery interchange.
- If the operation range of transmitter is shortened or the buzzer sounding was lower than normal, please replace the battery to new one.
- The alkaline battery life is 2~3 months and exchange the battery at once if the icon blinks.


Display

## Program setting

Program setting method is different according to transmitter.
(Two-way and One-way transmitter)
Transmitter must be disarm at the program setting.

### LCD 2-WAY TRANSMITTER


If you want change of the system program,

STEP1. Press the F button 3times.

STEP2. You can change to menu of the P-1, P-2, P-3, P-4 by press the M button.

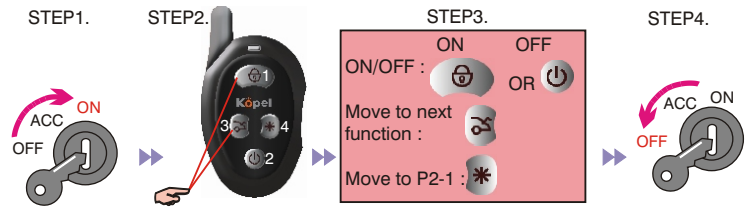
STEP3. Choose the function you want by press the trunk button.

STEP4. Choose the program state by press the button 1(ON) or button 2(OFF).

STEP5. Function you choose will be transmit a main and setting is completed by press the F button.

### ONE-WAY TRANSMITTER

One-way transmitter can be change only in P-1 and P-2 of the program menu.
Program menu step is marked by chirp sound.(ex: Menu 1-1 = 1 Chirp, 1-2 = 2 Chirps, ..)




## Program reset

- Program reset of the main control unit: If you press 1 and 3 button simultaneously for 2 seconds within 30sec after ignition OFF at the valet mode, all program will default setting.
- Program reset of the LCD transmitter: If you reset main control unit, you must reset of the transmitter. Put battery in with press M button after remove the battery of the transmitter and then all program of the transmitter will default setting.

| Program menu | LCD Display | P-1 Start Function | Factory Default | Optional |
|---|---|---|---|---|
| | | | Set up - Button 1 or 2 | |
| 1-1 | tur | Auto turbo timer program | OFF | ON |
| 1-2 | StL | Door re-lock after remote start | OFF | ON |
| 1-3 | ACC | Trunk output change(At remote start) | OFF | ON |
| 1-4 | LPG | LPG function setting | OFF | ON |
| 1-5 | Atr | Auto reservation of stick vehicles | ON | OFF |
| 1-6 | HEt | Glow plug sensing for diesel engines | OFF | ON |
| 1-7 | tEm | Cold & hot start | OFF | ON |
| 1-8 | IGt | IG2 output ON/OFF at disarming | ON | OFF |

| Program menu | LCD Display | P-2 Basic Function | Factory Default | Optional |
|---|---|---|---|---|
| | | | Set up - Button 1 or 2 | |
| 2-1 | CCH | Digital code valet mode | OFF | ON |
| 2-2 | IGL | Ignition lock/unlock | OFF | ON |
| 2-3 | PSA | Passive arming | OFF | ON |
| 2-4 | PSL | Passive lock | OFF | ON |
| 2-5 | LdA | Last door arming | OFF | ON |
| 2-6 | CHP | Chirp sound | ON | OFF |
| 2-7 | dUP | Double door unlock pulse | OFF | ON |
| 2-8 | dLP | Double door lock pulse | OFF | ON |

| Program menu | LCD Display | P-3 Timing Function | Factory Default / Set up - Button 1 or 2 |
|---|---|---|---|
| 3-1 | Stt | Run time for remote start | 2 10 **15** 25 35 45 Minutes |
| 3-2 | Std | Standby time for starter operation | **4** 8 12 15 18 20 Seconds |
| 3-3 | Sto | Crank time for the tach/Noise sensing | **0.7** 1.0 1.2 1.5 2.0 3.0Sec. |
| 3-4 | CSt | Cold start temperature setting | -4 -8 -12 -16 **-20** -24(℃) |
| 3-5 | Au1 | Aux 1 output LCH=Continue | **1** 5 10 20 40(Sec.) Continue |
| 3-6 | Au2 | Aux 2 output LCH=Continue | **1** 5 10 20 40(Sec.) Continue |
| 3-7 | ttt | Turbo time setting | 1 **2** 3 5 8 10 Minutes |
| 3-8 | Amd | Arm delay time setting | **5** 10 15 25 35 45 (Sec.) |

| Program menu | LCD Display | P-4 Advanced Function | Factory Default | Optional |
|---|---|---|---|---|
| | | | Set up - Button 1 or 2 | |
| 4-1 | SPo | Siren pulse output | OFF | ON |
| 4-2 | AEd | Automatic engine disable | OFF | ON |
| 4-3 | Lot | Door lock/unlock pulse for 3.5 seconds | OFF | ON |
| 4-4 | BPs | Bypass ON/OFF | OFF | ON |
| 4-5 | dom | Dome light is changed to armed output | OFF | ON |
| 4-6 | SAC | Smart access mode ON/OFF | OFF | ON |
| 4-7 | CAS | NC | ON | OFF |
| 4-8 | ACd | Arm cancel mode at door open | OFF | ON |

## Program Menu P-1 for Start Function

**1-1 Auto turbo timer program**
When turned ON, this is function for maintain engine on for 2mins after the door is locked. You can change the turbo time at program setting 3-7(17page).
(This is in use to aid function of the turbo vehicles.)
See 10page about the turbo function.

**1-2 Door re-Lock after remote start** (Only used by the install engineer)
When turned ON, door lock will be operated after engine turn off.

**1-3 Trunk output change(At remote start)** (Only used by the install engineer)
When turned ON, (+) will always output at the remote start.

**1-4 LPG function setting**(Optional)
When turned ON, the engine will turn off automatically within 30sec if LPG in gas line is empty when the engine turn off.
See 8page about the LPG function.
(This function is operated when you install LPG gas valve ON/OFF relay.)

**1-5 Auto reservation of stick vehicles**
In the default setting, this function is start program of the stick vehicle.
See 6, 7 page about the reservation of stick shift vehicle.

**1-6 Glow plug sensing for diesel engines** (Only used by the install engineer)
When turned ON, starter motor is operated after glow plug is OFF at the remote start. You must connect No.11 VIOLET wire of the connector CN 5.

**1-7 Cold & hot start**
When turned ON, engine automatically start if temperature become -20˚C or +50˚C at the arm mode. You can change the cold start temperature at 3-4.
This function is automatically off after total 8times operation.
This function will restart if transmitter become arm after disarm.

**1-8 IG2 output ON/OFF at the disarm** (Only used by the install engineer)
When turned OFF, IG2 is OFF at the disarm during remote start.
This function prevent from short in key box when the ignition key is turned ON during the vehicle remote start. In the default setting(ON), IG2 maintain ON.
(See 7page.Getting on the vehicle during remote start)

## Program Menu P-2 for Basic Function

**2-1 Digital code valet mode**

In the default setting: Valet is operated to ON/OFF if you press the valet button for 5seconds at the ignition key ON. (See 10page about the valet mode.)

When turned ON: You can use the digital code valet function.
Operating method (Code is same to digital door lock code. See 26page.)

STEP 1. Press the switch for 5seconds when the digital control module is standby mode, and then LED blinks one time and the display segment is rotated fast. (This function is maintained for 30 seconds.)

STEP 2. Knock the sensor more than 5 times after get off the car within 30 seconds, then the digital code start count. (If you press the switch again within 30 seconds, LED blinks 2 times and digital valet function is canceled.)

STEP 3. During the numbers automatically count with delay each 2 seconds from 0 to 9, knock the sensor at the registered CODE. Then selected number blinks 5 times and it automatically repeat next number from "0".

STEP 4. Select the remainder 3 CODES as upper STEP 3. If you select all CODES in order, valet mode is ON.

If you want to cancel the valet mode, press the valet button for 5 seconds at the ignition key ON.

**2-2 Ignition lock/unlock**

When turned ON, the doors will be locked when step on brake after the ignition is turned ON. The doors will be unlocked when the ignition is turned OFF.
Getting on the vehicle during remote start: Door is locked when ignition key ON and then step on the brake.

**2-3 Passive arming**

When turned ON, the system will arm automatically after 30seconds if the ignition key is OFF and door open/close.

**2-4 Passive lock**

When turned ON: When the system is arm by passive arming, door lock will be automatically operated.

**2-5 Last door arming** ⚠ CAUTION

When turned ON, if all door is closed at the disarm, door lock will be operated with arm after 30seconds.

**2-6 Chirp sound**

In the default setting, siren of the vehicle will output chirp sound when you operate transmitter.

**2-7 Double door unlock pulse** (Only used by the install engineer)

When turned ON, door unlock output will output 2times whenever unlock.

**2-8 Double door lock pulse** (Only used by the install engineer)
When turned ON, door lock output will output 2times whenever lock.

## Program Menu P-3 for Timing Function

**3-1 Run time for remote start**
This function adjust run time of the vehicle when remote start, cold start and time reservation start.

**3-2 Standby time for starter operation**
This function adjust delay time until starter motor is operated when remote start, cold start and time reservation start.

**3-3 Crank time for the tach or noise sensing** (Only used by the install engineer)
This function adjust operation time of the starer motor when remote start by tach or noise sensing.

**3-4 Cold start temperature setting**
When turn ON program menu 1-7, you can change the cold start temperature. Default setting is -20℃.

**3-5 Aux 1 output** (Optional : Only used by the install engineer)
In the default setting, Aux 1 will output in main for 1second when you operate Aux 1 by transmitter. You can change the Aux 1 output time.
If you set to LCH (Continue), Aux 1 will be continuously output before you operate Aux 1 by transmitter again.

**3-6 Aux 2 output** (Optional : Only used by the install engineer)
In the default setting, Aux 2 will output in main for 1second when you operate Aux 2 by transmitter. You can change the Aux 2 output time.
If you set to LCH (Continue), Aux 2 will be continuously output before you operate Aux 2 by transmitter again.

**3-7 Turbo time setting**
When you use the auto turbo timer program(P1-1), you can change the turbo time. Default setting is 2minutes.

**3-8 Arm delay time setting**
When you operate arming(4page), you can change delay time of sensing(door, trunk, hood) after door is locked. (Shock sensing is add 20 seconds to delay time.)

## Program Menu P-4 for Advanced Function

**4-1 Siren pulse output**
In the default setting, siren will be continually outputted for 30seconds when alarm is operated. When turned ON : Siren will be outputted to pulse.

**4-2 Automatic engine disable**(Optional)
When turned ON, starter kill will be automatically outputted 30seconds after ignition OFF with LED blink slowly.

**4-3 Door lock/unlock pulse for 3.5 seconds**(Only used by the install engineer)
When turned ON, door lock/unlock will be outputted for 3.5 seconds.
Default setting: 0.8 seconds

**4-4 Bypass ON/OFF**
When turned ON, if door/hood/trunk is sensed before arm delay time(P3-8), the siren will output 3 chirps after arm delay time, and then inform to transmitter.
In the default setting, if door/hood/trunk is sensed before arm delay time(P3-8), the siren will be outputted after arm delay time. (Default is bypass function OFF.)

**4-5 Dome light is changed to armed output**(Only used by the install engineer)
When turned ON, dome light output(CN5 black wire)is changed to always output during arming.

**4-6 Smart access mode ON/OFF**
When turned ON, LCD display ACCESS icon. And the main control unit sense the transmitter when transmitter is near by vehicle, the system will be automatically disarm (Unlock). If the transmitter is far from vehicle, the system will be arm.
If you use this function, the transmitter battery life will be short.

**4-7 NC**

**4-8 Arm cancel mode at door open**
When turned ON, if the door is open, arm is not operated by transmitter.
In this case, you can operate arm after closing the door.

## HARNESS WIRE CONNECTION GUIDE

- Please read this entire installation guide before the installation.
- Do not disconnect the battery if the vehicle has the anti-theft-coded radio.
- Test all circuits with a high-quality digital multi-meter before making connections.
- Vehicle anti-theft systems(immobilizers) require a bypass module.
  The bypass module allows for easy interfacing, while still maintaining the OEM security system's integrity.

### CN1 6Pin Heavy Gauge Harness

1. **White(+)Starter Output**
   Connect this wire to the starter wire in the vehicle.
2. **Black(-)Ground**
   Connect this wire to a clean, paint-free sheet metal location.(driver kick panel)
3. **Blue(+)2nd Ignition Output**
   Connect the wire to the second ignition wire in the vehicle.
4. **Green(+)IG3 Output**(Contemporary output with GRAY of the CN4)
   This output can be used according to vehicles at the remote start.
   And this wire output after 1minute after remote start is operated.
5. **Red(+)12V Constant Input**
   Must be connected to a high current source. Since the factory supplies(+)12V to the key switch. That is used to operate the motor, it is recommended that these wire be connected there.
6. **Yellow(+)Ignition Output**
   Connect this wire to the ignition wire in the vehicle.

### CN2 5Pin Output Harness

1. **White(+)Light Flash Output**
   This wire should be connected to the (+)parking light wire.
2. **White(+)Light Flash Output**
   This wire should be connected to the (+)parking light wire.
3. **Orange(+/-)Trunk Unlock Programmable Output**(Optional)
   This output is used to trunk unlock.
   If you change to (-) jumper 4 of the control box, orange wire will output (-).
   - Additional Ignition output: If you change to ON 1-3 of the program menu, orange wire will output at the remote start. At this time you can't use trunk unlock output.

**4. Brown(+)Siren Output**

Connect this wire to the (+)wire of the siren.

**5. Green(-)Status Output**(Optional)

This come in one second before ignition on and continues until one second after ignition off.(Use the immobilizer bypass module or LPG relay.)

## CN3 2Pin Door Lock/Unlock Harness(High Power Output)

**1. Green(+/-)Lock Output**(10A)

This wire will output door lock/unlock motor when you lock the door by the transmitter.

**2. Blue(+/-)Unlock Output**(10A)

This wire will output door lock/unlock motor when you unlock the door by the transmitter.

## CN4 6Pin Lock/Unlock & Output Harness(Low Power Output)

**1. Green(-)Lock Output**(-250mA)

This wire output -250mA when you operate "DOOR LOCK(ARM)" by the transmitter and this must be connected to (-)signal line of the door lock circuit that installed in vehicles.

**2. Blue(-)Unlock Output**(-250mA)

This wire output -250mA when you operate "DOOR UNLOCK(DISARM)" by the transmitter and this must be connected to (-)signal line of the door unlock circuit that installed in vehicles.

**3. Black(-)2nd Kill Output**(-250mA)(Optional)

This wire output the opposite No.1 (White wire)Starter kill output of Cn5. And this wire can be used when you ignition or fuel pump circuit cut off.

**4. White(-)Horn honk Output**(-250mA)(Optional)

This wire is not outputted at shock sensing, only outputted when the door, trunk and IG sensing(In ARM mode). This output signal is outputted 1 second ON and 1.5 second OFF for 30 seconds.

**5. Gray(-)IG3 Output**(-250mA)(For GSM)(Optional)

This wire always output with GREEN wire of the connector CN1. And this wire output after 1minute after remote start is operated.

**6. Brown(-)Preliminary Start Input**(For GSM)(Optional)

Engine is started if (-)pulse is inputted in condition that remote start is operated. This function is operated same as the remote start function. If (-)pulse is inputted when engine is ON, engine become OFF. Signal pulse length is suitable from 0.5 to 3 seconds.

## CN5 12Pin Output/Input Harness

**1. White(-)Starter Kill Output**(Optional)

The WHITE wire is pre-wired to control the starter kill relay.
This wire supplies a (-)250mA ground as long as the system is armed.
But kill out is not outputted at the remote starter.
And this output ceases as soon as the system is disarmed.

NOTE: If using the WHITE wire to activate an add-on accessory such as window automation, pager or voice module a 1 Amp diode must be installed to ensure proper operation.
IMPORTANT! Never interrupt any wire other than the starter wire.

**2. Black(-250mA)Dome light Output**(Optional)

Connect this wire to the optional dome light supervision relay.
IMPORTANT! This output is only intended to drive a relay. It cannot be connected directly to the dome light circuit, as the output cannot support the current draw of one or more bulbs.
When turned ON of 4-5 Dome light is changed to armed output, dome light output(CN5 black wire)is changed to always output during arming.

**3. Brown(-250mA)Aux1 Output**(Optional)

This wire provides a (-)250mA output(1 second) whenever the transmitter button(s) controlling Aux1 is pressed.
You can change to output time in 3-5 of the program menu.

**4. Green(-)Trunk Sensing**(Optional)

This input will respond to a negative input with an instant trigger.
Also this wire connect to trunk pin switch.

**5. Gray(-)Hood Sensing**(Optional)

This wire must be connected to hood pin switch. This input will disable or shut down the remote start when the hood is opened. It will also trigger the security system if the hood is opened while the system is armed.
This wire can be used to (-)Brake sensing.

**6. Blue(- or +)Door Sensing**

Most vehicles use negative door trigger circuits. Connect the BLUE wire to a wire showing ground when any door is opened. When connecting to newer model vehicles there is generally a need to use individual door triggers.

Use when change to Jumper 3 is (+)setting: This type of dome circuit is used in many Ford products. Connect the BLUE wire to a wire that shows (+)12V when any door is opened.

**7. Red(+)Alternator Sensing**

This wire check start status of the vehicles.
Connect to the Lamp terminal of the generator.
This wire must be inputted (+) when engine of the vehicle is starting.
And this wire don't connect in case noise mode or tach pulse sensing.

**8. Yellow(Tach Pulse)Enging Sensing**

This wire connect to tachometer sensing wire or ignition coil(-)wire and so on. Therefore connect to wire that pulse is outputted when engine is operated. And this wire don't connect in case noise mode or alternator sensing.

**9. Sky Blue(-250mA)Aux2 Output**(Optional)

This wire provides a (-)250mA output(1 second) whenever the transmitter button(s) controlling Aux2 is pressed.
You can change to output time in 3-6 of the program menu.

**10. Pink(+) Ignition2 Sensing**(Preliminary)

This wire is preliminary wire for sensing ignition2.
This wire need not connect because sense by ignition2 output when 2nd ignition output of the connector CN 1 is normally connected.

**11. Violet(+ or -)Glow Plug Sensing**(Optional)

In diesel vehicles it is necessary to interface with the wire that turns on the "wait to start light" in the dashboard. This wire illuminates the bulb until the vehicle's glow plugs are properly heated. When the light goes out the vehicle can be started. This wire is always available at the connector leading to the bulb in the dashboard. It can also be found at the engine control module (ECM) in many vehicles. However, there are some instances of diesel vehicles without "wait to start light" wires. If this wire become (-)status when "wait to start light" is on, you must setting to (-) jumper 2 of the main PCB.

**12. Orange(+)Brake Sensing**

This wire must be connected to the vehicle's brake light wire. This is wire that shows (+)12V when the brake pedal is pressed. The remote start will be disabled or shut down any time the brake pedal is pressed.
(-)Brake sensing can be used instead of #5 (-)Hood sensing wire of the CN 5.

## CN6 3Pin Shock Sensor Cable

Inputs shorter than 0.6 seconds will trigger the warning, while inputs longer than 0.6seconds will trigger full alarm(30 sec).

## CN7 4Pin Digital control module(Optional)

**-Digital door unlock/lock, digital/manual valet, LED, driver call function**

-User can unlock the door without transmitter by input the secret code that user register.
-User can operate door lock function to simple operation without transmitter at the parking.
-If you input the wrong code, the security function is operated.

### 1. OPERATING (Digital code valet operation is refer to P2-1, 19page.)

Operation of all function must be started in the standby mode that the display segment slowly rotate.

**1)DOOR LOCK**

STEP 1. If you press the switch one time in the standby mode, LED blinks one time and the display segment is rotated fast.
(This function is maintained for 30 seconds.)

STEP 2. Knock the sensor more than 5 times after get off the car within 30 seconds and close the all doors, then door will be locked.
(If you press the switch again within 30 seconds, LED blinks 2 times and lock function is canceled.)

**2)DOOR UNLOCK**

STEP 1. Knock the sensor more than 5 times at the standby mode.
(The call function is operated one time at the first knock.)

STEP 2. During the numbers automatically count with delay each 2 seconds from 0 to 9, knock the sensor at the registered CODE. Then selected number blinks 5 times and it automatically repeat next number from "0".

STEP 3. Select the remainder 3 CODES as upper STEP 2.
If you select all CODES in order, door open function is operated.

CAUTION: If you input a wrong code 5 times within one hour, "U" is marked and all functions are stopped for one hour.
If you press the switch, this function is canceled.

**3)SECRET CODE REGISTRATION**

STEP 1. Press the switch 20 times at standby mode and then LED blinks 2 times.

STEP 2. Knock the sensor more than 5 times within 30 seconds.
During the numbers automatically count with delay each 2 seconds from 0 to 9,knock the sensor at a number you want. Then selected number blinks 5 times and it automatically repeat next number from"0".
And if you input consecutively all 4 numbers as upper STEP 2, a new code is inputted.
If you want to change the secret CODE, you have to just repeat STEP 1-2.

CAUTION: User's secret code must be registered by user.
(Factory setting code is "1234".)

## 2. Installation

1)4pin Cable: Connect to main control box.
2)Installation location: First of all, stick the sticker on the inside the windshield of the wheel, and stick the control module on that sticker.
3)Sensitivity adjustment: If you turn the volume under the switch to the right, sensitivity of knock will be more sensitive.(Normal location: Center)
4)Secret code reset: If you put on the 4pin cable again with press the switch, secret CODE is changed to "1234".

## Cn8 5P Receiver cable

### Mounting the Receiver/Antenna

he best location for the receiver/antenna is centered on left of the front windshield.
The antenna should be mounted horizontally.
Metallic window tint can also affect range, so this should be a consideration when determining the mounting location.

**After determining the best mounting location, follow these steps:**

1. Clean the mounting area with a quality glass cleaner or alcohol to remove any dirt or residue.
2. Plug the 5 pin cable into the receiver/antenna.
3. Mount the receiver/antenna using the supplied double-sided tape.
4. Plug the receiver/antenna cable into the main control unit.

## CN9 2P Valet Switch (Optional)

The Valet button should be accessible from the driver's seat. It plug in to the CN 9 on the side of the main control unit.(Normal valet function)

## CN10 2P LED Indicator (Optional)

Mountain the LED indicator in a visible location such as dash or console.
Plug the LED into the control module.

## Switch and Jumper Settings

### 1)Set up a start sensing

Start sensing is fixed up alternator signal input in the default setting. And if you want sense engine status to other methods(the noise or tach pulse sensing),see the under.

**(A) Alternator sensing: Dip 1 = OFF, Dip 2 = OFF and set to alternator jumper 1.**

That mean noise sense if red LED is ON.

DIP-2: OFF

DIP-1: OFF

Jumper 1

<Input delay time(VR1) adjustment for the alternator sensing>

This is used when you want lengthen operation time of the start motor in case you install alternator sensing method.(Turn to the right if you want lengthen operation time.)

**(B) Noise sensing: Dip switch 1 is ON and change to noise jumper 1.**

That mean noise sense if red LED is ON.

DIP-2: OFF

DIP-1: ON

Jumper 1

Vehicles that noise is sensed is do not use noise sensing mode when you turn to "ON" IG key with engine is not started. Noise check method is that you have to see RED LED of main control PCB. This LED must be become "ON" only when engine is started. If LED is become "ON" when engine is not started, you must use another method(alternator, tach pulse sensing).

**(C) Tach pulse sensing: Dip switch 2 is ON.**

That mean pulse sense if yellow LED blink.

DIP-2: ON

DIP-1: OFF

NOTICE

If you install in tach pulse sensing wire (CN5 Yellow), you have to operate RPM setup.

(See the 15 page : RPM setup mode)

### 2)Brown Jumper wire

In case use automatic gear vehicles, this wire must be cut.

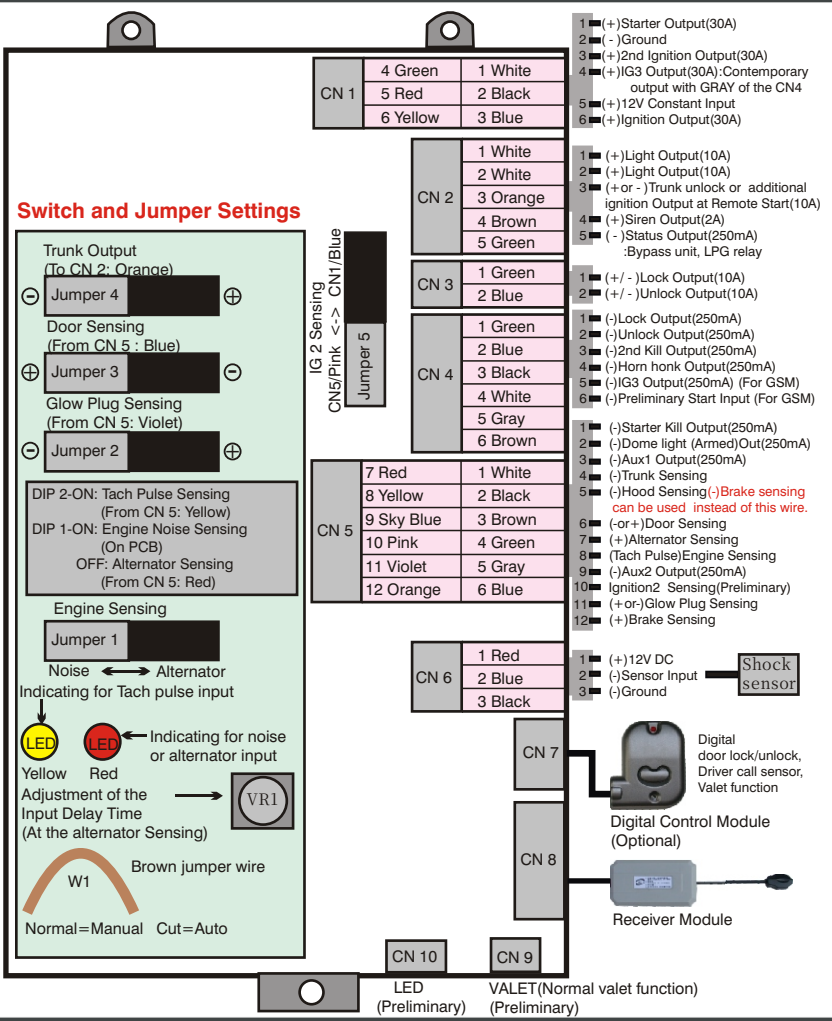
You must not cut this wire in case manual gear vehicles.

(Factory set = Manual gear type)

CAUTION

DO NOT CUT BROWN JUMPER WIRE IN CASE MANUAL GEAR VEHICLES

**Status memory function:** System status will maintain if even power of the main control unit become OFF and then ON.
(Arm - 1 chirp, Disarm - 2 chirps, Valet -3 chirps)


CN 1
4 Green
5 Red
6 Yellow
1 White
2 Black
3 Blue
1 (+)Starter Output(30A)
2 ( - )Ground
3 (+)2nd Ignition Output(30A)
4 (+)IG3 Output(30A):Contemporary output with GRAY of the CN4
5 (+)12V Constant Input
6 (+)Ignition Output(30A)
CN 2
1 White
2 White
3 Orange
4 Brown
5 Green
1 (+)Light Output(10A)
2 (+)Light Output(10A)
3 (+or - )Trunk unlock or additional ignition Output at Remote Start(10A)
4 (+)Siren Output(2A)
5 ( - )Status Output(250mA) :Bypass unit, LPG relay
CN 3
1 Green
2 Blue
1 (+/ - )Lock Output(10A)
2 (+/ - )Unlock Output(10A)
CN 4
1 Green
2 Blue
3 Black
4 White
5 Gray
6 Brown
1 (-)Lock Output(250mA)
2 (-)Unlock Output(250mA)
3 (-)2nd Kill Output(250mA)
4 (-)Horn honk Output(250mA)
5 (-)IG3 Output(250mA) (For GSM)
6 (-)Preliminary Start Input (For GSM)
CN 5
7 Red
8 Yellow
9 Sky Blue
10 Pink
11 Violet
12 Orange
1 White
2 Black
3 Brown
4 Green
5 Gray
6 Blue
1 (-)Starter Kill Output(250mA)
2 (-)Dome light (Armed)Out(250mA)
3 (-)Aux1 Output(250mA)
4 (-)Trunk Sensing
5 (-)Hood Sensing(-)Brake sensing can be used instead of this wire.
6 (-or+)Door Sensing
7 (+)Alternator Sensing
8 (Tach Pulse)Engine Sensing
9 (-)Aux2 Output(250mA)
10 Ignition2 Sensing(Preliminary)
11 (+or-)Glow Plug Sensing
12 (+)Brake Sensing
CN 6
1 Red
2 Blue
3 Black
1 (+)12V DC
2 (-)Sensor Input
3 (-)Ground
Shock sensor
CN 7
Digital door lock/unlock, Driver call sensor, Valet function
CN 8
Digital Control Module (Optional)
Receiver Module
CN 10
LED (Preliminary)
CN 9
VALET(Normal valet function) (Preliminary)
Switch and Jumper Settings
Trunk Output (To CN 2: Orange)
Jumper 4
Door Sensing (From CN 5 : Blue)
Jumper 3
Glow Plug Sensing (From CN 5: Violet)
Jumper 2
DIP 2-ON: Tach Pulse Sensing (From CN 5: Yellow)
DIP 1-ON: Engine Noise Sensing (On PCB)
OFF: Alternator Sensing (From CN 5: Red)
Engine Sensing
Jumper 1
Noise ⟷ Alternator
Indicating for Tach pulse input
LED
LED
Indicating for noise or alternator input
Yellow
Red
Adjustment of the Input Delay Time (At the alternator Sensing)
VR1
Brown jumper wire
W1
Normal=Manual Cut=Auto
IG 2 Sensing
CN5/Pink <-> CN1/Blue
Jumper 5

# Remote Start & Security System

Köpel