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**GROUP 54B**

# **SMART WIRING SYSTEM (SWS)**

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## GENERAL INFORMATION

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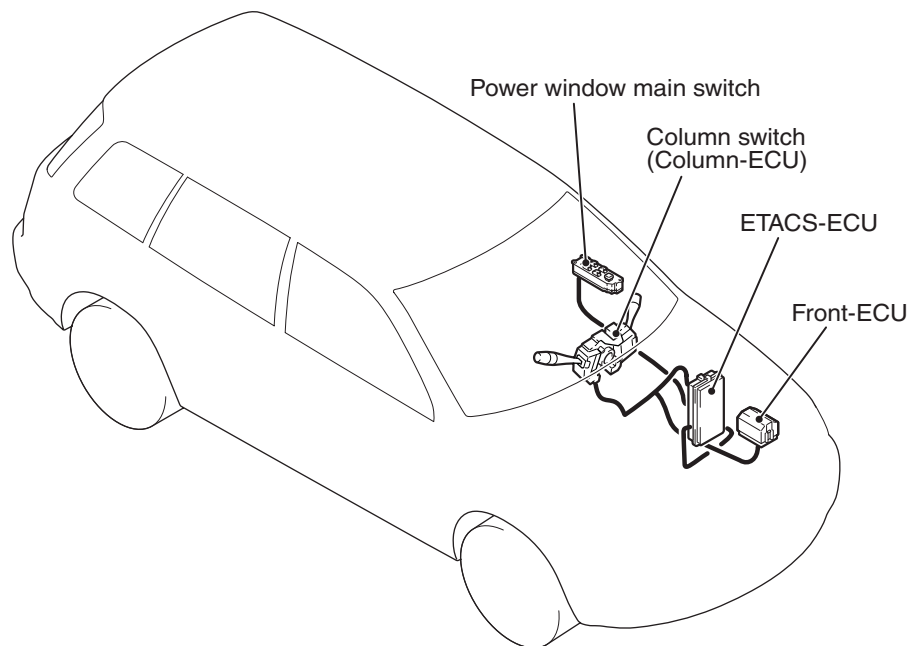
SWS is a minimal line system which transmits numerous signals using one wiring to control against increased weight and complication of harnesses which result from the increase in electronic accessories.

Basically the same as the new PAJERO.

To transmit numerous signals, the ETACS\*-ECU, column switch (incorporating inside the column-ECU), front ECU and power window main switch (power window switch of the driver's side) incorporate multi-distribution circuits to carry out communication between control units.

**NOTE:** \*: ETACS (Electronic Time and Alarm Control System)

## CONSTRUCTION DIAGRAM

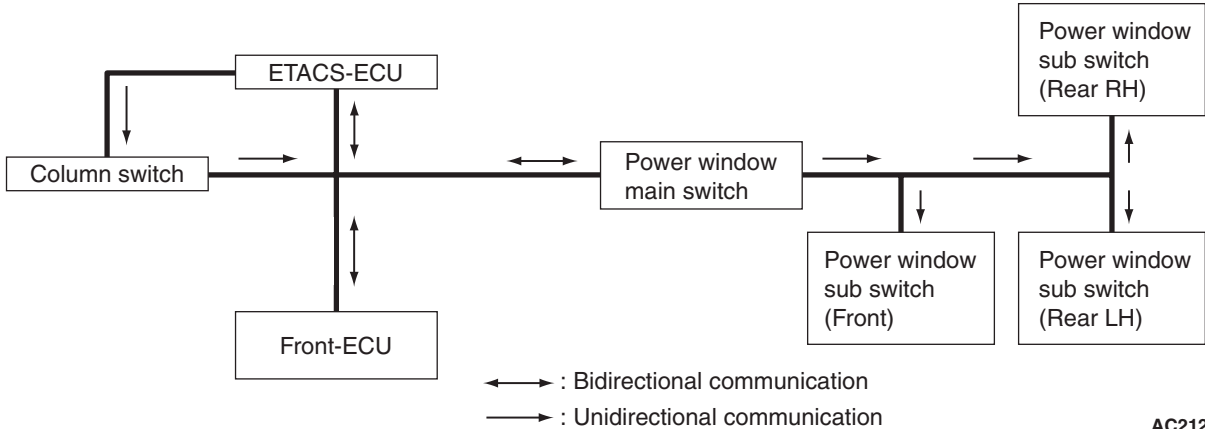


AC605519AB

COMMUNICATION METHOD

M2541001000163

The exclusive signal lines for transmitting the multi-distribution data are connected as follows between the ETACS-ECU, column switch (incorporated inside the column-ECU), front-ECU, power window main switch (incorporated inside the power window-ECU), and power window sub switches (incorporated inside the power window-ECU) for internal communication.



AC212517AG

MULTI-DISTRIBUTION INPUT/OUTPUT BY CIRCUIT

M2541002000401

Multi-distribution is employed by the following circuits. The relation of the input switches, sensors, ECUs connected by multi-distribution lines, and outputs are also shown below.

Buzzer

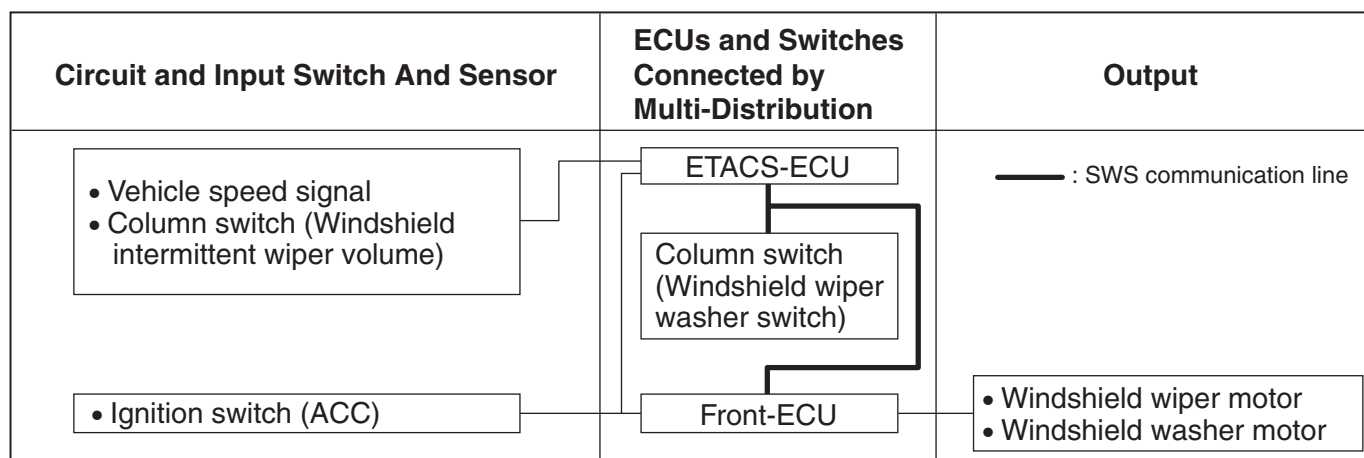
- Lamp reminder function

Circuit and Input Switch	ECUs and Switches Connected by Multi-Distribution	Output
<div><ul style="list-style-type: none"><li>Ignition switch (IG1)</li><li>Driver's door switch</li></ul></div>	<div><div>Column switch (Lighting switch)</div><div>ETACS-ECU</div></div>	<div>Buzzer (built-in ETACS-ECU)</div> <div>— : SWS communication line</div>

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**Windshield wiper washer**

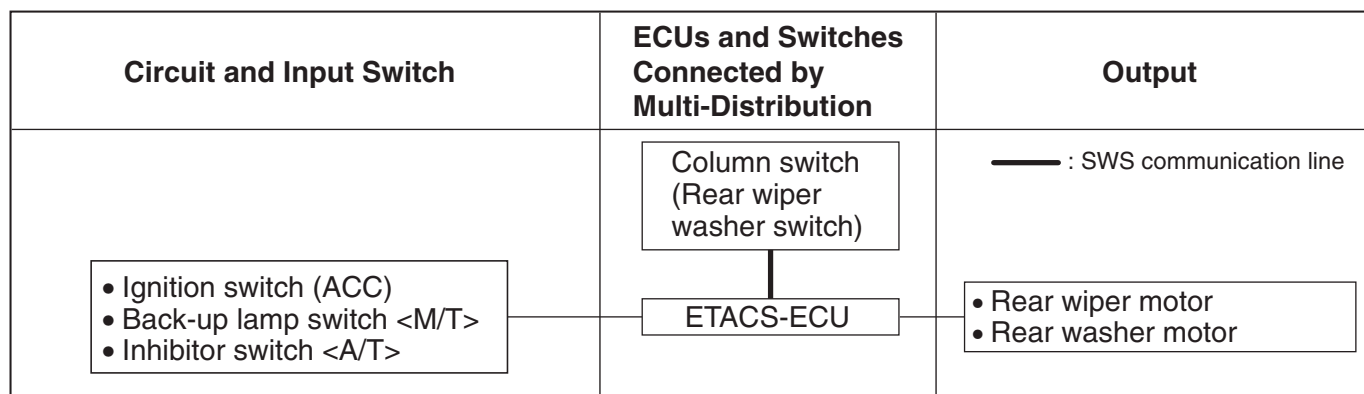
- Windshield mist wiper
- Vehicle speed-dependent variable windshield intermittent wiper
- Windshield low speed wiper
- Windshield high speed wiper
- Windshield washer



AC212521AC

**Rear wiper washer**

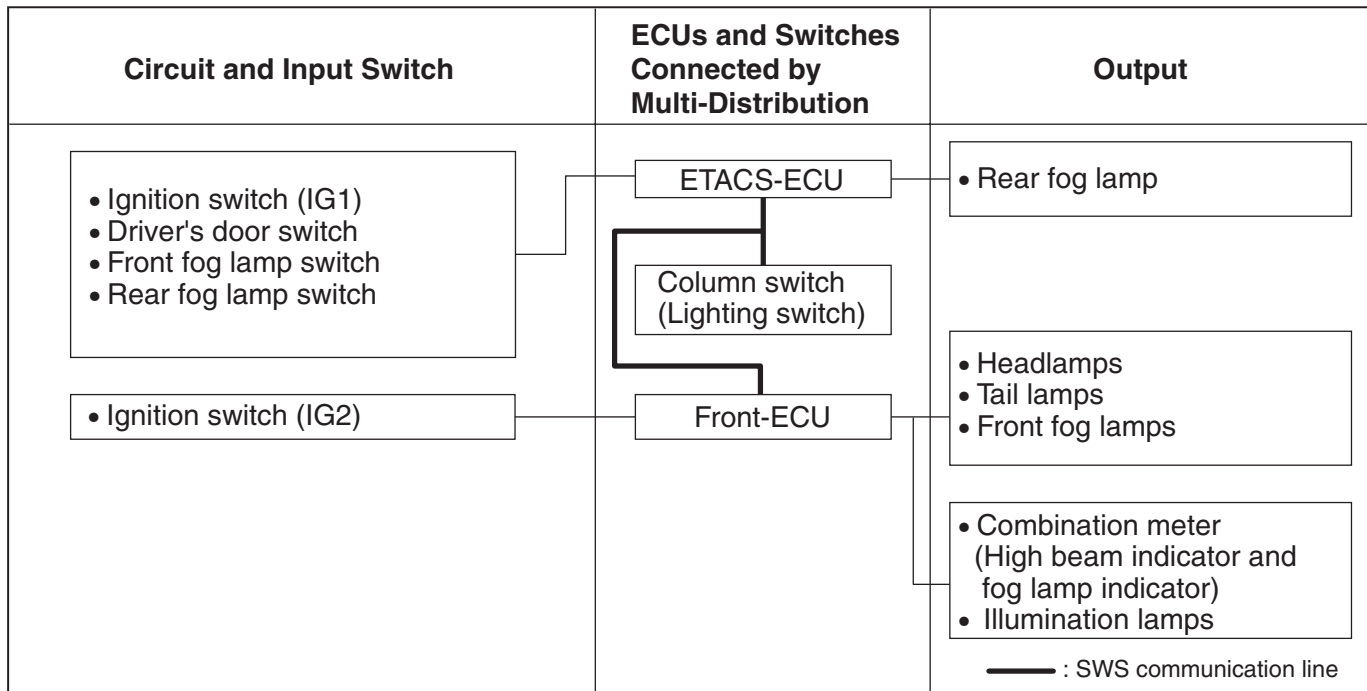
- Rear wiper
- Rear washer



AC212522AD

### Lighting

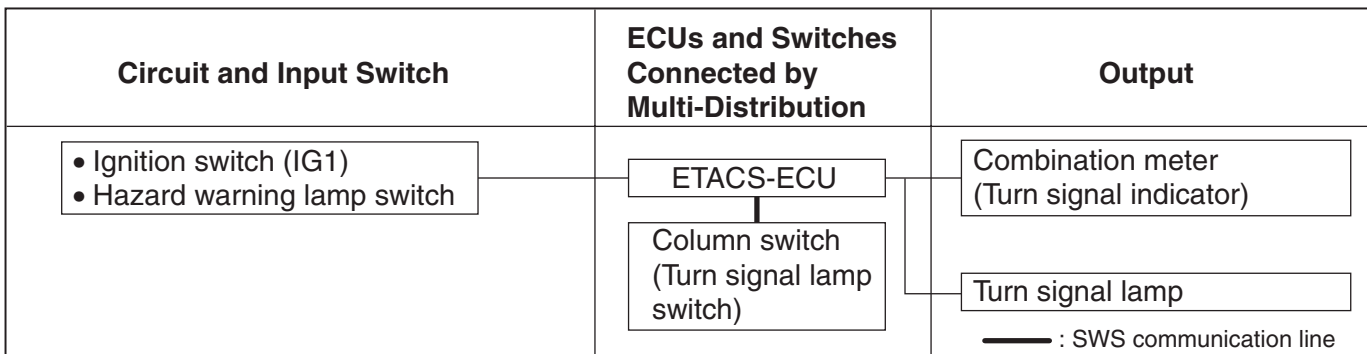
- Headlamp, tail lamp
- Headlamp automatic shutdown function
- Daytime running light function
- Front and rear fog lamp



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### Turn signal lamp

- Turn signal lamp
- Hazard warning lamp

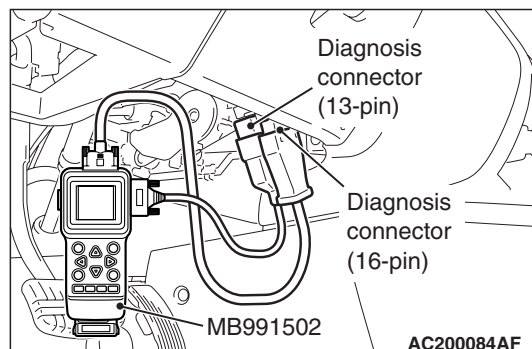


AC212524AC

## DIAGNOSTIC FUNCTION

M2541003000482

### DIAGNOSIS CODE READING



The ETACS-ECU sends diagnosis codes if the communication line is faulty when the M.U.T.-II/III is connected.

Code number	Trouble content
11	Trouble related to the ETACS-ECU
12	Trouble related to the column switch or improper communication with the ETACS-ECU
13	Trouble related to the front-ECU or improper communication with the ETACS-ECU
21	Short circuit in SWS communication line
31	Open circuit in the signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)
32	Short circuit in the signal line between the SRS-ECU and the ETACS-ECU (impact detection signal)

### SWS INPUT SIGNAL CHECK BY M.U.T.-II/III

#### <USING THE M.U.T.-II>

When the M.U.T.-II is connected to the diagnosis connector, and switches input for the SWS are operated, the buzzer in the M.U.T.-II sounds, indicating whether the operations of the switches are satisfactory or not.

#### <USING THE M.U.T.-III>

When the M.U.T.-III is connected to the diagnosis connector and any of the SWS-linked switches is operated, the PC buzzer sounds to evaluate whether the switch is normal or not.

### <SWS INPUT SIGNAL CHECK AND ECU CHECK BY USING SWS MONITOR>

The switch signals sent by ECUs and the operations of these ECUs can be confirmed by using the SWS monitor and the M.U.T.-II/III.

## INPUT SIGNALS THAT CAN BE CHECKED

Input signal		Conditions for sounding buzzer
Ignition switch (ACC)		Turn from "LOCK" (OFF) to "ACC" position
Ignition switch (IG1)		Turn from "ACC" to "ON" position
Back-up lamp switch <M/T> or inhibitor switch <A/T>		When the ignition switch is turned ON and the shift lever <M/T> or the selector lever <A/T> is moved to the R position.
Key reminder switch <Vehicles with keyless entry system>		Remove the ignition key from ignition key cylinder (form inserted position)
Hazard lamp switch		Turn from OFF to ON
Front fog lamp switch		
Rear fog lamp switch		
Driver's door switch		Open the driver's door
All door switch		Open any door when all the doors are closed.
Driver's door lock actuator switch		Move the door lock knob from lock position to unlock position or vice versa
Power window main switch		Operate each power window switch on the power window main switch.
Speed signal		When the speed changes from less than 10 km/h to more than 10 km/h
Keyless entry transmitter <Vehicles with keyless entry system>		When each switch is pressed
Column switch	Tail lamp switch	When the lighting switch is turned from one position to the tail lamp position
	Headlamp switch	When the lighting switch is turned from one position to the headlamp position
	Dimmer switch	When the switch is turned from the OFF to the ON position
	Passing switch	
	Turn signal lamp LH switch	
	Turn signal lamp RH switch	
	Windshield mist wiper switch	
	Windshield intermittent wiper switch	
	Windshield low speed wiper switch	
	Windshield high speed wiper switch	
	Windshield intermittent wiper interval adjusting knob	When the interval adjusting knob is turned from "FAST" to "SLOW" while the ignition switch is ON. (A pulse is output around the centre.)
	Windshield washer switch	When the switch is turned from the OFF to the ON position
	Rear wiper switch	
	Rear washer switch	
Interior lamp loaded signal		Illuminates the interior lamps

## ECU FUNCTIONS AND CONTROLS IN THE SWS

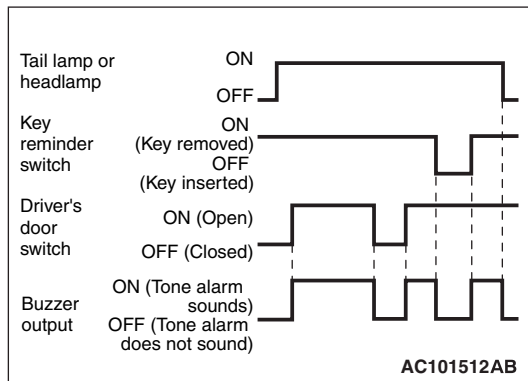
M2541004000850

Following functions are controlled by ECUs of SWS.

Function		Control ECU	Explanation of function
Buzzer	Lamp reminder function	ETACS-ECU, column switch	<a href="#">P.54B-9</a>
Central door locking	Central door locking control function	ETACS-ECU	<a href="#">P.54B-9</a>
	Ignition key reminder function		<a href="#">P.54B-9</a>
	Impact detection door unlock function		<a href="#">P.54B-10</a>
Keyless entry system	Keyless entry hazard lamp answerback function	ETACS-ECU	<a href="#">P.54B-10</a>
	Keyless entry room lamp answerback function		<a href="#">P.54B-10</a>
	Timed locking mechanism		<a href="#">P.54B-10</a>
Windshield wiper and washer	Intermittent control	ETACS-ECU, column switch	<a href="#">P.54B-11</a>
	Mist wiper control		<a href="#">P.54B-12</a>
	Low speed wiper and high speed wiper control		<a href="#">P.54B-12</a>
	Windshield wiper linked with washer function		<a href="#">P.54B-13</a>
Rear wiper and washer	Rear wiper control		<a href="#">P.54B-14</a>
Headlamp washer	Headlamp washer control		<a href="#">P.54B-14</a>
Headlamp	Headlamp automatic-shutdown function	ETACS-ECU, column switch	<a href="#">P.54B-15</a>
	Daytime running light function <Vehicles with DRL>	ETACS-ECU, front-ECU, column switch	<a href="#">P.54B-15</a>
Flasher timer function	Turn signal lamp	ETACS-ECU, column switch	<a href="#">P.54B-16</a>
	Hazard warning lamp		<a href="#">P.54B-16</a>
Fog lamp	Front fog lamp control function		<a href="#">P.54B-16</a>
	Rear fog lamp control function		<a href="#">P.54B-17</a>
Interior lamp	Dimmer interior lamp control function	ETACS-ECU	<a href="#">P.54B-17</a>
	Interior lamp automatic-shutdown function <Vehicles with keyless entry system>		<a href="#">P.54B-18</a>
	Ignition key cylinder illumination lamp control function		<a href="#">P.54B-19</a>
Adjustment function <vehicles with keyless entry system>		ETACS-ECU, column switch	Refer to <a href="#">P.54B-19</a> .

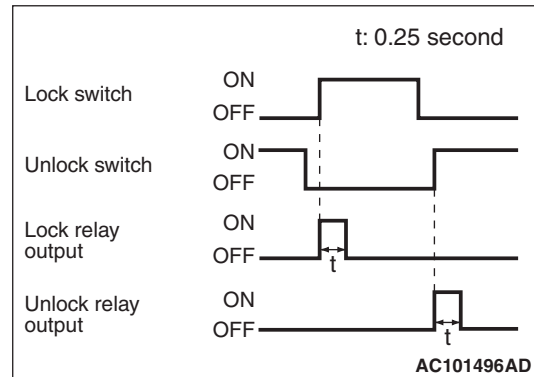


## BUZZER LAMP REMINDER FUNCTION



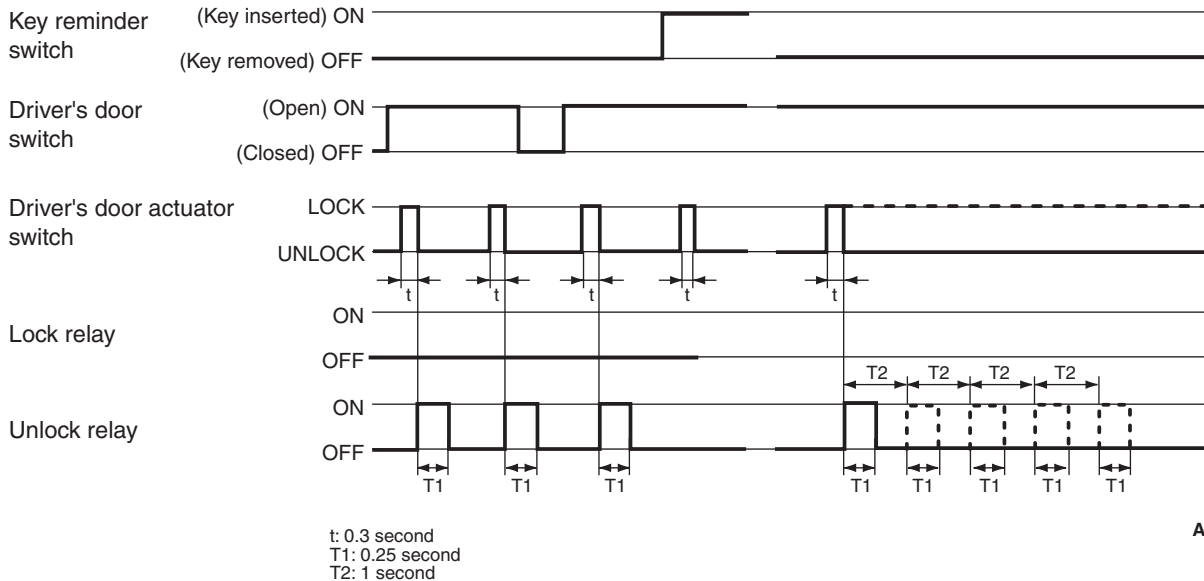
When the ignition key is removed and then the driver's door is opened with turning ON the tail lamp or the head lamp, the buzzer sounds continuously to alert the driver that the lamp is still ON. However, if the tail lamp or the headlamp is turned off by the headlamp auto-turn off function, the buzzer does not sound.

## CENTRAL DOOR LOCKING CENTRAL DOOR LOCKING CONTROL FUNCTION



When the front doors is locked (when the lock switch turns ON after turning OFF the unlock switch in the driver's door lock actuator), ETACS-ECU turns ON the lock relay output for 0.25 second, and locks all doors (including the tailgate). When the front doors is unlocked (when the unlock switch turns ON after turning OFF the lock switch on the driver's door lock actuator), ETACS-ECU turns ON the unlock relay output for 0.25 second, and unlocks all doors (including the tailgate).

## Ignition key reminder function



When the driver's door is opened with the ignition key inserted to the ignition cylinder and the door is locked (when the lock switch turns ON after turning OFF the unlock switch in the driver's door lock actuator), after approximately 0.3 second, ETACS-ECU turns ON the unlock relay output for 0.25 second to discourage the door lock operation so that the igni-

tion key left in the ignition cylinder is prevented. If the discouraging the door lock operation fails, the current supply will be retried. (The unlock relay output is turned ON for 0.25 second up to five times with one second interval.)

**NOTE:** The broken line in the graph indicates the current supply retry state if the discouraging door lock operation fails.

## IMPACT DETECTION DOOR UNLOCK FUNCTION

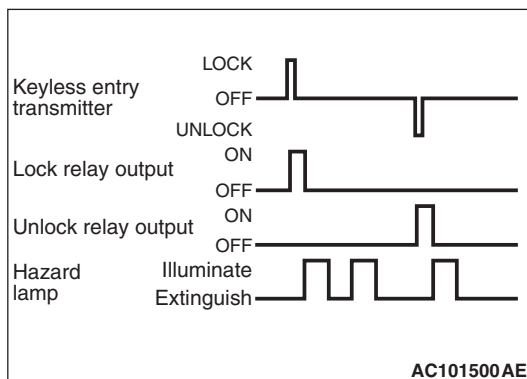
If the vehicle crashed with the ignition switch ON or 30 seconds after turning the ignition switch to LOCK (OFF), and the impact sensor detects an impact greater than the specified value, the impact sensor sends the signal to ETACS-ECU. Then, within the 0.1 second, ETACS-ECU energizes the unlock relay for one second for releasing the door lock to prevent passengers to kept inside the vehicle after the crash.

**NOTE:** The fail safe disables the operation under the following conditions. (Diagnosis code No. 31 or 32 is output at this time.) Turn ON the ignition switch again after turning the ignition switch to LOCK (OFF) to return from the fail safe state.

- No. 31: When the ignition switch is ON, and the sensor shows under the short circuit detect voltage for 2.5 second
- No. 32: When the ignition switch is ON, and the sensor shows over the closed circuit detect voltage for 0.4 second

## KEYLESS ENTRY SYSTEM

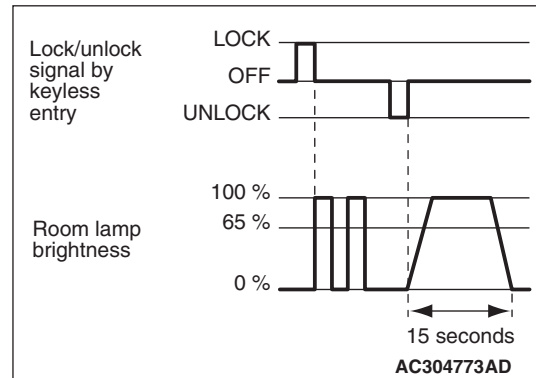
### KEYLESS ENTRY HAZARD LAMP ANSWERBACK FUNCTION (THE INITIAL CONDITION: WITH FUNCTION OF LOCK/UNLOCK)



The hazard answerback function that allows checking the lock/unlock state of the door easily even in the daytime is installed. When the lock signal from the keyless entry transmitter is received into ETACS-ECU, all doors (including the tailgate) are locked, and the hazard warning lamp blinks twice. When the unlock signal is received, all doors (including the tailgate) are unlocked, and the hazard warning lamp blinks once.

**NOTE:** The answerback blink time can be adjusted by the adjustment function. (Refer to [P.54B-19.](#))

## KEYLESS ENTRY ROOM LAMP ANSWERBACK FUNCTION



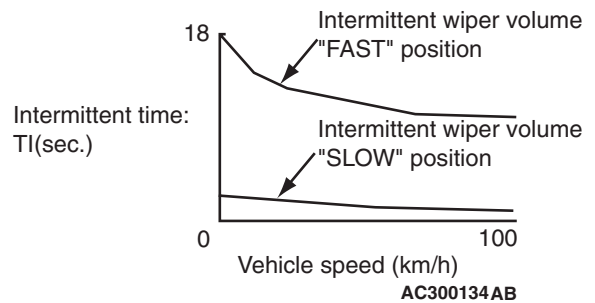
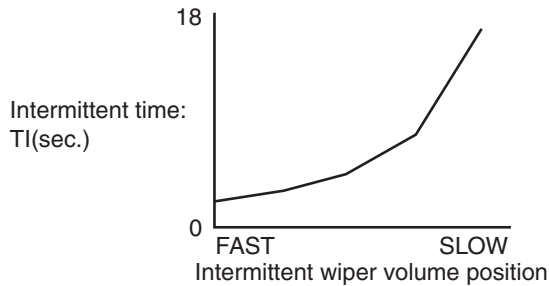
The room lamp blinks two times while locking the door for easy checking the keyless entry function. When the door is unlocked, the lamp lamps on for 15 seconds (100%), and turns off.

## TIMED LOCKING MECHANISM

After unlocking the doors with the keyless entry transmitter, if no doors are opened, if the ignition key is not inserted or if the locking function is not operated, the ETACS-ECU automatically locks the doors in 30 seconds.

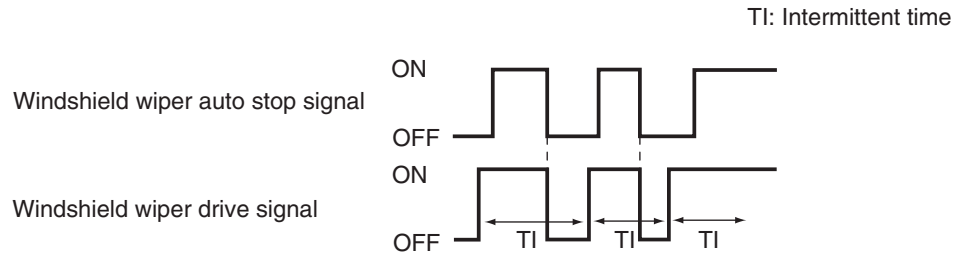
## WINDSHIELD WIPER AND WASHER

### Intermittent control (the initial condition: with function)



ETACS-ECU calculates the intermittent time TI from the vehicle speed calculated from the windshield intermittent wiper volume of the column switch and the vehicle speed signals (engine-ECU), and sends it to the front ECU as SWS data.

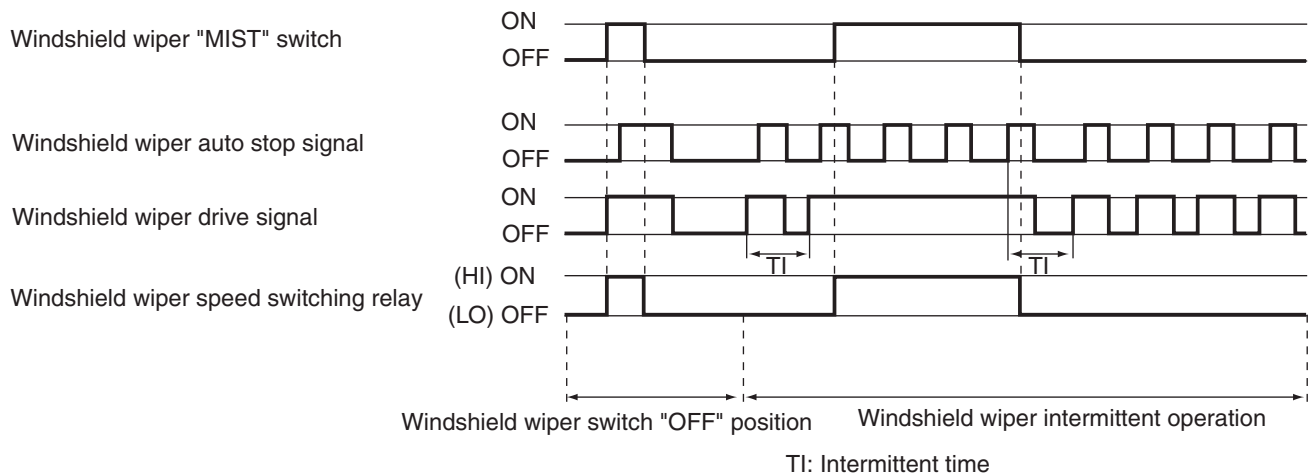
**NOTE:** The vehicle speed sensing function can be invalidated by the adjustment function. (Refer to [P.54B-19.](#))



AC300135 AC

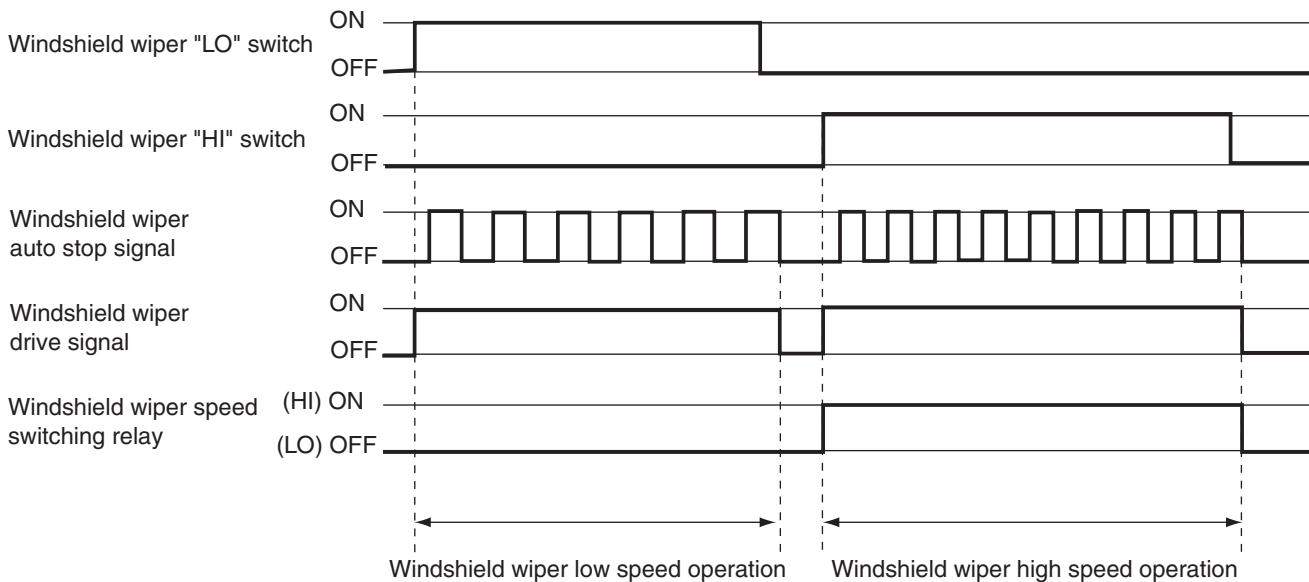
The front ECU determines the intermittent time TI from the input SWS data, and turns ON the windshield wiper drive signal. When the wiper comes to the stop position, the windshield wiper auto-stop signal is turned OFF, and the windshield wiper drive signal turns OFF.

When the intermittent time TI is elapsed after being turned ON the windshield wiper drive signal, the windshield wiper drive signal is turned ON again, and the above-mentioned operation is repeated.

**Mist wiper control**

AC300283 AC

When the windshield wiper mist switch of the column switch is turned ON while the ignition switch is ACC or ON, the column switch turns ON the windshield wiper drive signal. At the same time, the wiper speed switching relay turns to ON (HI). When the windshield mist wiper switch is ON, the windshield wiper operates at the high speed.

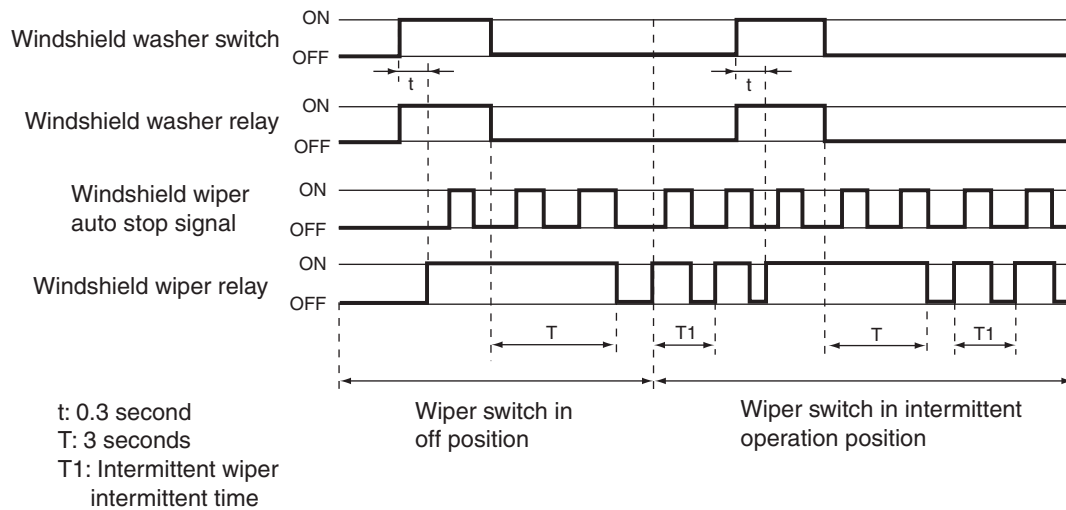
**Low speed wiper and high speed wiper control**

AC300284 AC

When the windshield low speed wiper switch of the column switch is turned ON while the ignition switch is ACC or ON, the column switch turns ON the windshield wiper drive signal. Also, the wiper speed switching relay turns to OFF (LO), and the windshield wiper operates at the low speed.

When the windshield high speed wiper switch is turned ON, the windshield wiper drive signal turns ON. Also, the wiper speed switching relay turns ON (HI), and the windshield wiper operates at the high speed.

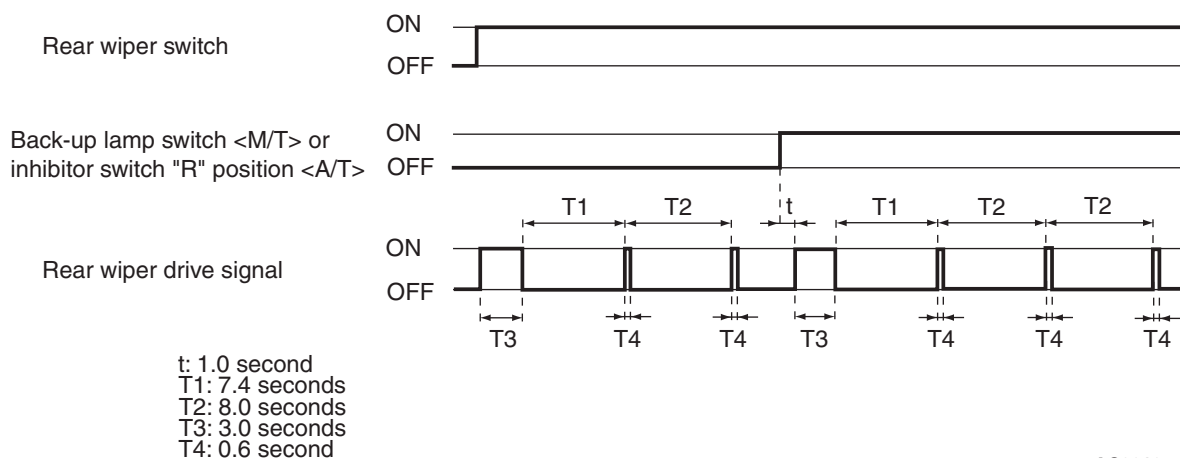
## Windshield wiper linked with washer function



AC207005AD

Wiper switch	OFF position				Intermittent operation position				Low-speed or high-speed operation position
Washer switch ON time	0.3 seconds or less	0.3 to 0.5 seconds	0.5 to 0.7 seconds	0.7 seconds or more	0.2 seconds or less	0.2 to 0.5 seconds	0.5 to 0.7 seconds	0.7 seconds or more	-
T1	0 second	1 second	2 seconds	3 seconds	0 second	1 second	2 seconds	3 seconds	3 seconds

- When the front-ECU receives a windshield washer switch signal from the column switch with the ignition switch in the ACC or the ON position, the ECU turns on the windshield washer relay. When the windshield washer relay becomes ON, the windshield washer motor starts to run to spray the washer fluid in the washer tank onto the windshield through the washer nozzles. When the windshield washer switch signal remains on for 0.3 seconds or more, the signal turns on the windshield wiper relay (The wiper interval depends. For details, see the list) to operate the windshield wiper at high speed. Turning off the windshield washer switch causes the front-ECU to turn off the windshield wiper relay "T" seconds later, thus operating the wiper to the auto stop position at low speed.
- When the windshield washer switch is turned ON during the intermittent operation of the windshield wiper, the windshield wiper switches to continuous operation and then resumes intermittent operation.

**REAR WIPER AND WASHER****Rear wiper control [the initial condition: 8 seconds (without successive operations)]**

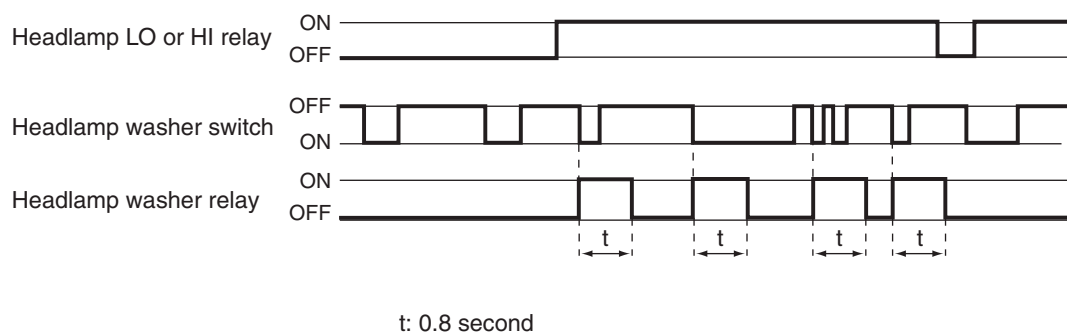
AC301877AC

1. When the rear wiper switch on the column switch is turned ON with the ignition switch at the ACC or ON position, ETACS-ECU turns ON the rear wiper drive signal for 3 seconds (approximately 2 operations) and performs the intermittent action at 8-second intervals.

When the shift lever <M/T> or selector lever <A/T> is moved to R position during the rear wiper operation, the back-up lamp switch <M/T> or inhibitor switch R position <A/T> turns ON one second after that, ETACS-ECU sends the rear wiper drive signal for 3 seconds (approximately 2 operations), and operates the intermittent action in 8 seconds interval.

2. By the special operation of the rear wiper switch on the column switch (successive 2-time operations), the rear wiper operates continuously regardless of the set intermittent time.

*NOTE: The rear wiper intermittent time can be adjusted or cancelled for continuous operation by the adjustment function. (Refer to P.54B-19.)*

**Headlamp washer****Headlamp washer control**

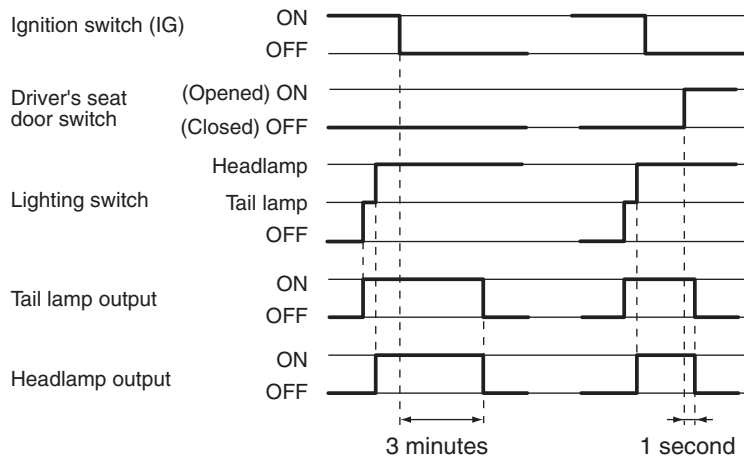
AC304638AB

When the headlamp relay (LO or HI) is ON with the ignition switch in the ACC or the ON position, turning on the headlamp washer switch on the column switch causes the front-ECU to turn on the headlamp washer relay for 0.8 seconds. When the headlamp

washer relay becomes on, the headlamp washer motor operates to spray washer fluid onto the headlamps.

## HEADLAMP

### Head lamp automatic-shutdown function (the initial condition: with function)



AC300449 AB

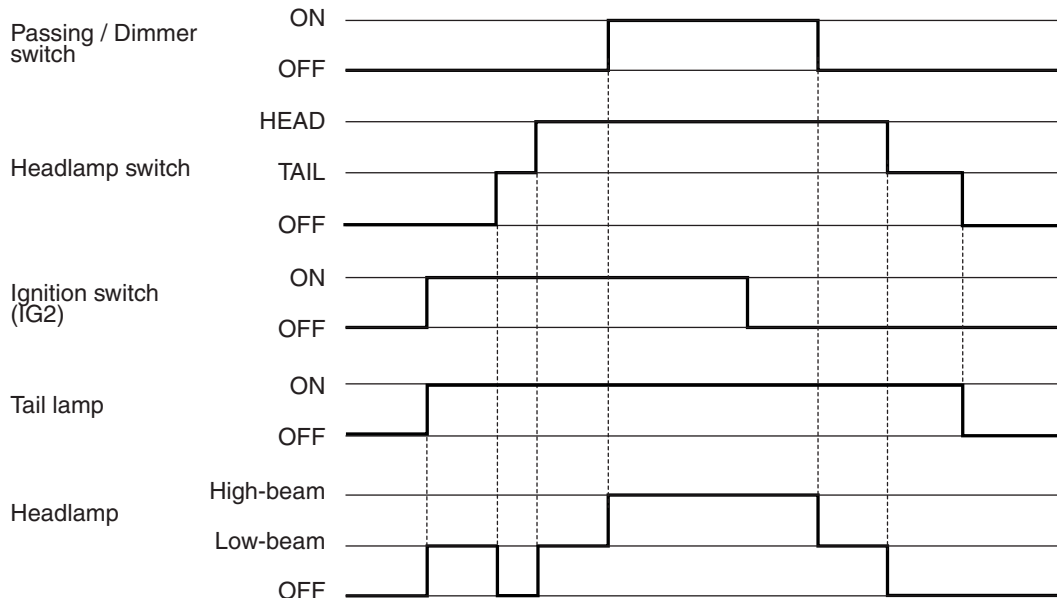
Even when the lighting switch (tail lamp switch or head lamp) is ON, the headlamp (including the tail lamps) turns off automatically with any of the following conditions to prevent the battery discharge caused by unattended operation.

- If the ignition switch is turned OFF with the lighting switch ON, the lamp turns off automatically after 3 minutes. If the driver's door is opened during the 3 minutes, the lamp turns off after one second. (One seconds before turning off, the lamp reminder buzzer sounds.)

After the head lamp automatic-shutdown function, when the lighting switch is turned OFF and then ON or, the ignition switch is turned ON, the head lamp lamps again.

*NOTE: For vehicles with the keyless entry system, this function can be invalidated by the adjustment function. (Refer to [P.54B-19](#).)*

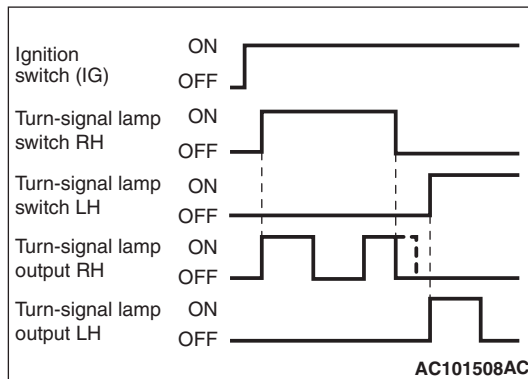
## DAYTIME RUNNING LIGHT FUNCTION



AC401328AB

The front-ECU illuminates the low-beam headlamps and tail lamps when the ignition switch is turned "ON" with the headlamp switch is at the "OFF" position. It illuminates the low-beam headlamps and the tail lamps when the headlamps are turned on with the daytime running light on.

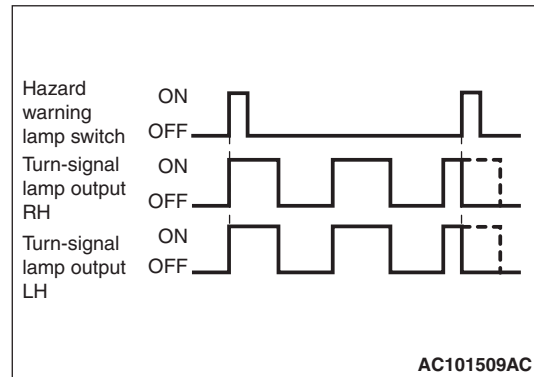
## FLASHER TIMER FUNCTION TURN SIGNAL LAMP



When the turn signal lamp switch is ON (LH or RH) with the ignition switch is ON, the turn signal lamp output (flash signal) is turned ON.

If the lamp bulb of the front or rear turn signal lamp has burned out, the flashing speed becomes faster to alert the driver that the lamp bulb has burned out.

## HAZARD WARNING LAMP



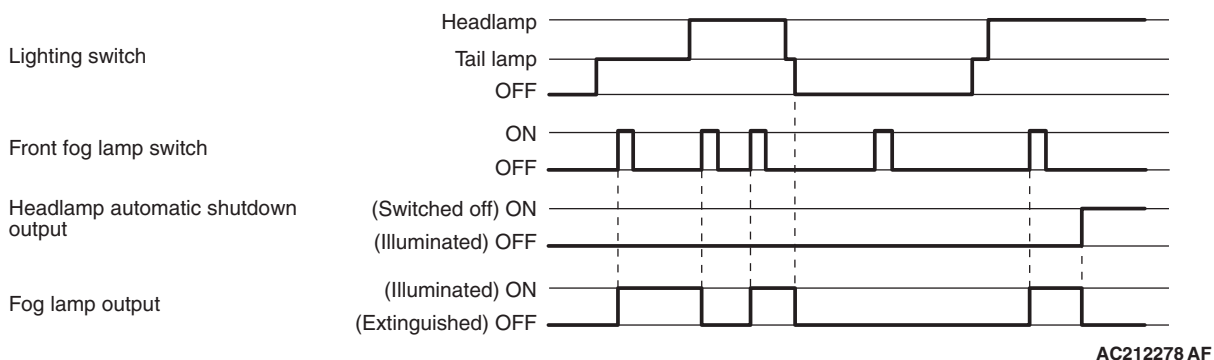
When the hazard lamp switch input signal turning from OFF to ON is detected, the flashing states turns over by the signal. (When the hazard lamp is not blinking, it blinks. If it is blinking, it turns off.)

### NOTE:

1. The push-return switch is adopted for the hazard lamp switch.
2. Even if the lamp bulb has burned out, the flashing speed of the hazard lamp is not changed.

## FOG LAMP

### Front Fog Lamp Control Function



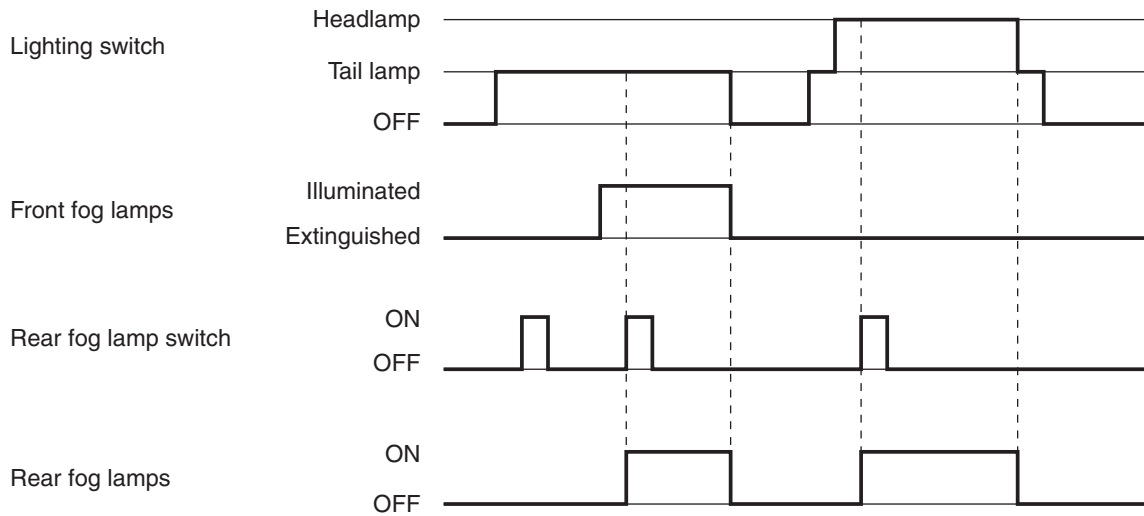
When the fog lamp switch is turned to ON with the tail lamp or the headlamp lit (the tail lamp switch or the headlamp switch is ON), the fog lamp relay turns ON, and the fog lamps lamp.

If the tail lamp or the headlamp is turned off with the lighting switch OFF while the fog lamps lit, the fog lamps turn off the same time to prevent unattended operation.

If the tail lamp is turned off by the headlamp auto-turn off function, the fog lamps turn off at the same time. However, if the tail lamps lamp again, the fog lamps do not.



## Rear Fog Lamp Control Function <Vehicles with Rear Fog Lamp>



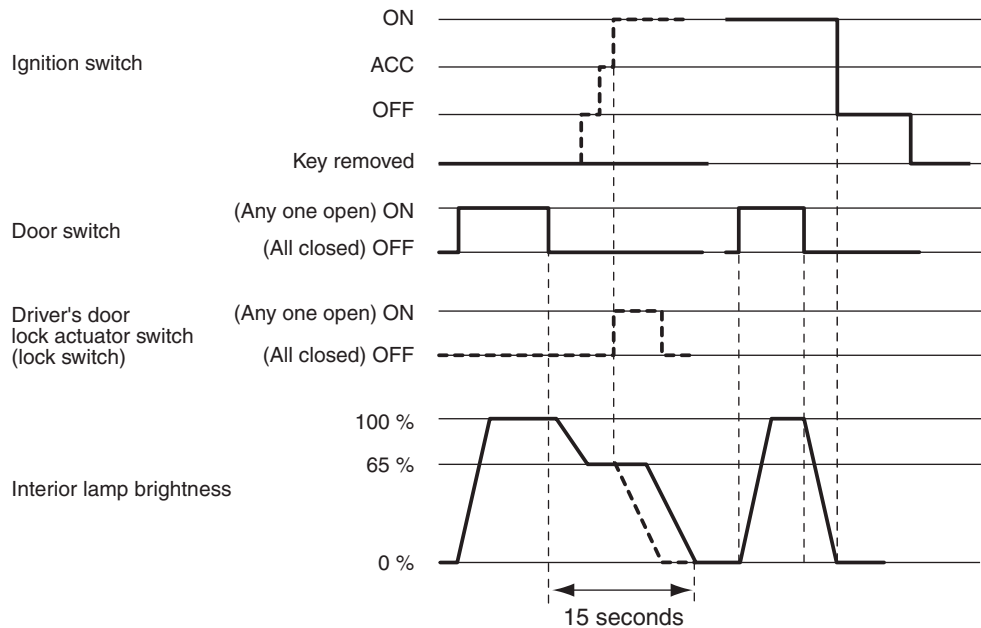
AC212279AB

If the rear fog lamp switch is turned ON when the headlamp or the front fog lamp is turned ON, the rear fog lamp is switched ON and OFF alternatively.

If the headlamp and the front fog lamp are turned OFF, the rear fog lamp is turned OFF at the same time.

## Interior lamp

### DIMMER INTERIOR LAMP CONTROL FUNCTION (THE INITIAL CONDITION: 15 SECONDS)



AC304774AB

When the interior lamp switch is on the door position, ETACS-ECU controls the interior lamp lamps as follows.

1. When the ignition switch is OFF:

By opening any door or tailgate lamps, the lamp turns ON (100%), and dims (65%) when the door or tailgate is closed, then and turns off after 15 seconds.

However, when the ignition switch is turned ON or the door lock is operated, the lamps turn off at that time.

2. When the ignition switch is ON:

By opening any door or tailgate lamps, the lamp (100%) turns ON and OFF when the door or tailgate is closed.

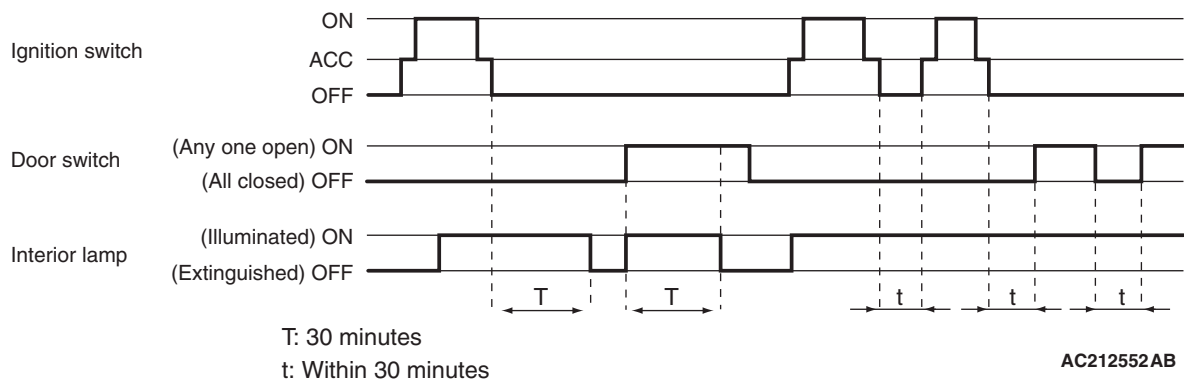
3. When all doors and the tailgate are closed, and the ignition key is removed <Vehicles with keyless entry system>:

By removing the ignition key with all doors and the tailgate closed, the lamp turns ON 100%, and turns off after 15 seconds.

By inserting the ignition key again or operating the door lock with the lamp lit, the lamps turns off.

*NOTE: For the vehicles with the keyless entry system, the dimmer interior lamp turning off duration can be changed by the adjustment function. (Refer to P.54B-19)*

### Interior lamp automatic-shutdown off function <Vehicles with Keyless Entry System> (the initial condition: with function)



When the interior lamp such as the room lamp [all interior lamps connecting to the room lamp fuse (the front room lamp, the map lamp, the rear room lamp, and the ignition key cylinder illumination lamps)] is lit, but either one of the conditions is met, the interior lamp is turned off automatically for preventing the battery discharge caused by the unattended operation or the door-ajar.

- After 30 minutes with the interior lamp lit while the ignition switch is OFF, the lamp turns off automatically.
- After 30 minutes with any door opened while the ignition switch is OFF, the lamp turns off automatically.

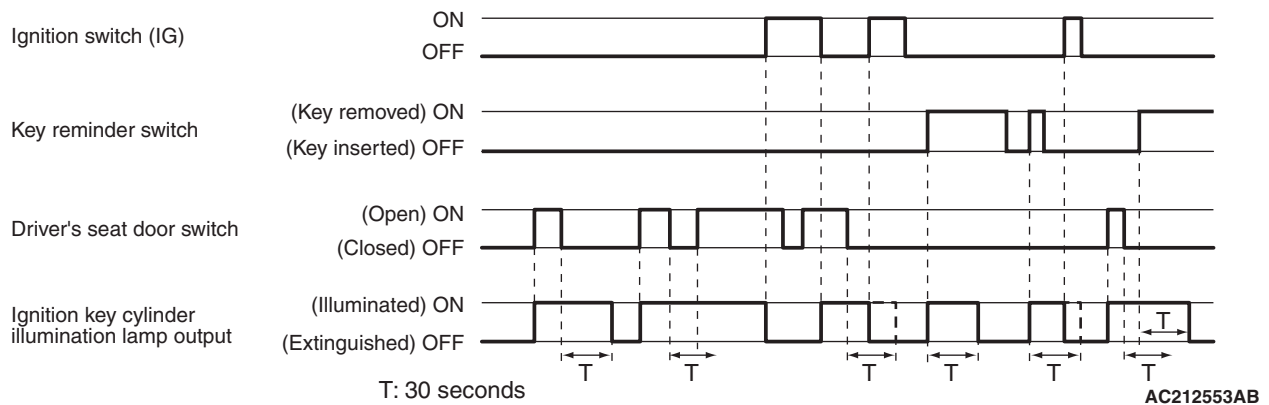
After automatic-shutdown function, the interior lamp turns ON when any of the following condition is met.

- Open and close doors.
- Operate the keyless entry transmitter.
- Turn the ignition switch to ACC or ON.

**NOTE:**

1. The interior lamp automatic-shutdown function can be disabled or enabled by the adjustment function. (Refer to P.54B-19.)
2. After turning the interior lamp on again, the lamp turns off after 30 minutes, when the interior lamp automatic-shutdown function is met.

## Ignition key cylinder illumination lamp control function



The ignition key cylinder illumination lamp lamps for 30 seconds when the driver's door is opened/closed with the ignition switch OFF. Also when the ignition key is removed from the ignition key cylinder, the lamp lamps for 30 seconds. In any cases, the ignition key cylinder illumination lamp turns ON when the ignition switch is turned to ON.

## ADJUSTMENT FUNCTION <VEHICLES WITH KEYLESS ENTRY SYSTEM>

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According to the adjustment mode entry conditions of the input switch, the following functions can be adjusted. The data on adjustment will be memorized even if the battery is removed.

- Keyless entry system hazard answerback function
- Vehicle speed-dependent wiper function
- Headlamp automatic-shutdown function
- Delayed lamp-off time of the room lamp
- Interior lamp automatic-shutdown function
- Initialisation of all functions (Returns to initial settings)

### 1. Conditions for entering the adjustment mode

#### i. Set each switch to the following state.

- Hazard lamp switch: OFF
- Diagnosis control: ON (Connect the M.U.T.-II/III or earth No.1 pin of the 16-pin diagnosis connector.)
- Key reminder switch: OFF (Insert the ignition key)
- Ignition switch: "LOCK" (OFF) position
- Driver's door switch: OFF (driver's door closed)

- ii. When the windshield washer switch is ON for more than ten seconds, the buzzer in the ETACS-ECU sounds for three seconds, and the adjustment mode will be set.

### 2. Conditions for exiting the adjustment mode

- Diagnosis control: OFF (Disconnect the M.U.T.-II/III or the earth of No.1 pin of the 16-pin diagnosis connector disconnected.)
- Key reminder switch: ON (Remove the ignition key)
- Ignition switch: Turning to any position other than "LOCK" (OFF) position
- Driver's door switch: ON (driver's door opened)
- When three minutes pass without configurations performed
- When the other warning buzzer output is generated

### 3. Configurations of various functions

Function	Adjustment procedure
Keyless entry system hazard answerback function	<p>When the lock button of the transmitter is pressed twice continuously within two seconds, the hazard answerback function during the lock state will be switched between available or unavailable.</p> <ul style="list-style-type: none"> <li>• Function available: Buzzer sounds once. (Initial state)</li> <li>• Function not available: Buzzer sounds twice.</li> </ul> <p>When the unlock button of the transmitter is pressed twice continuously within two seconds, the hazard answerback function during the unlock state will be switched between available or unavailable.</p> <ul style="list-style-type: none"> <li>• Function available: Buzzer sounds once. (Initial state)</li> <li>• Function not available: Buzzer sounds twice.</li> </ul>
Vehicle speed-dependent wiper function	<p>When the windshield wiper mist switch is turned ON for more than two seconds, the vehicle speed-dependent wiper function is switched between available or unavailable.</p> <ul style="list-style-type: none"> <li>• Function available: Buzzer sounds once. (Initial state)</li> <li>• Function not available: Buzzer sounds twice.</li> </ul>
Headlamp automatic-shutdown function	<p>When the passing switch is turned ON for more than two seconds with the head lamp switch ON and the turn signal lamp switch turned to RH, the headlamp automatic-shutdown function is switched between available or unavailable.</p> <ul style="list-style-type: none"> <li>• Function not available: Buzzer sounds twice.</li> <li>• Function available: (when the tail lamp illuminates with the ignition switch turned to the "LOCK" (OFF) position, it is not automatically turned off): Buzzer sounds three times. (Initial state)</li> </ul>
Dimmer interior lamp control	<p>When the turn signal lamp switch is set in the order of RH to LH to RH to LH within three seconds from the LH position, the delayed lamp-off time switches (Returns to a after e, and repeats from a in order.)</p> <ol style="list-style-type: none"> <li>30 seconds: Buzzer sounds once.</li> <li>10 seconds: Buzzer sounds twice.</li> <li>0 seconds (No delay time): Buzzer sounds three times.</li> <li>15 seconds: Buzzer sounds four times. (Initial state)</li> <li>7.5 seconds: Buzzer sounds five times.</li> </ol>
Interior lamp automatic-shutdown function	<p>When the hazard lamp switch is turned ON for more than two seconds, the interior lamp automatic-shutdown function switches in the following order. (a and b switches alternately)</p> <ol style="list-style-type: none"> <li>Function available: Buzzer sounds once. (Initial state)</li> <li>Function not available: Buzzer sounds twice.</li> </ol>
Initialisation of all functions	<p>When the windshield washer switch is ON for more than 20 seconds continuously, the buzzer sounds twice, and all functions will be initialized. (Settings are returned to their initial states.) The adjustment mode entry buzzer sounds after 10 seconds, however to initialize all functions, the ON state should be continued for 20 seconds. When the windshield washer switch is ON for more than 20 seconds continuously without the adjustment mode set, the adjustment mode will be set after 10 seconds without the initialisation of all functions.</p>