05HIX–01

SYSTEM DESCRIPTION

1. PARTS DESCRIPTION

Components	Function
Automatic light control sensor	Detects ambient light and sends the information to the multiplex network body ECU.
Hazard warning switch	On or off state is sent to the FLASHER RELAY.
Stop lamp switch	Sends the brake pedal state to the rear combination lamp and high mount stop lamp.
HEAD relay	Turns the headlamp on when it is actuated by the headlamp ON demand signal via the multiplex network body ECU.
TAIL relay	Turns the taillamp and illumination on when it is actuated by the taillamp ON demand signal via the multiplex network body ECU.
DIM relay	Turns the headlamp (high beam) on when it is actuated by the headlamp ON demand signal via the multiplex network body ECU.
DRL relay	Controls the headlamp (low beam) when it is actuated by the DRL ON demand signal via the multiplex network body ECU.
Daytime Running Light Relay	Controls the headlamp (low beam) when it is actuated by the DRL ON demand signal via the multiplex network body ECU.
Door courtesy switch	Detects the door open/close state and sends the information to the respective multiplex network body ECU.
Door unlock detection switch	Detects the door lock/unlock state and sends the information to the respective multiplex network body ECU.
Headlamp leveling actuator	Moves the headlamp (low beam) up and down according to the information from the headlamp beam level control ECU.
Height sensor	Detects the vehicle height and sends the corresponding information to the headlamp beam level control ECU.
Combination meter	Sends headlamp level warning according to the information from the headlamp beam level control ECU.

2. OPERATION DESCRIPTION

(a) Manual lighting system

(1) The multiplex network body ECU receives the following:

- Light SW tail signal
- Light SW head signal
- Light SW high beam signal
- Front fog SW signal
- Lighting system passing signal

(2) The multiplex network body ECU controls the following based on the signals listed in (1).

- HEAD relay ON signal
  Sent when light SW head signal is received.
- TAIL relay ON signal
  Sent when light SW tail signal and light SW head signal are received.
- DIM relay ON signal
  Sent when light SW high beam signal is received.
- FRONT FOG relay ON signal
  Sent when light SW tail and front fog SW signals are received.

(3) The multiplex network body ECU controls the on/off operation of the following based on the signals listed in (2):
- Headlamp (low)
- Headlamp (high)
- Clearance lamp
- Side marker lamp
- Front fog lamp
- Taillamp
- License plate lamp
- Room lamps

(b) Automatic lighting system

(1) The multiplex network body ECU receives the following:
- Light SW auto signal
- Light control SW signal

(2) The multiplex network body ECU controls the following based on the signals listed in (1):
- HEAD relay ON signal
  Sent according to the illuminance information from the light control signal when the light SW auto signal is received.
- TAIL relay ON signal
  Sent according to the illuminance information from the light control signal when the light SW auto signal is received.

(3) The multiplex network body ECU controls the on/off operation of the following based on the signals listed in (2).
- Headlamp (low)
- Clearance lamp
- Side marker lamp
- Taillamp
- License plate lamp

(c) Daytime running light system

(1) The multiplex network body ECU receives the following:
- Light SW tail signal
- Light SW head signal
- Light SW auto signal
- Light control signal
- Ready condition signal
- Parking brake SW signal

(2) The multiplex network body ECU controls the following based on the signals listed in (1).
- HEAD relay ON signal
  Sent when the ready condition signal has been received but the light SW head and parking brake SW signals have not been received.
  Sent when the ready condition signal has been received but the parking brake switch signal and the illuminance information from the light control have not been received while receiving the light switch auto signal.
- DIM relay ON signal
  Sent when the relay condition signal has been received but the light SW head and parking brake SW signals have not been received.
  Sent when the ready condition signal has been received but the parking brake switch signal and the illuminance information from the light control have not been received while receiving the light switch auto signal.

- Two–lamp DRL relay ON signal
  Sent when the ready condition signal has been received but the light SW head and parking brake SW signals have not been received.
  Sent when the ready condition signal has been received but the parking brake switch signal and the illuminance information from the light control have not been received while receiving the light switch auto signal.
- PWM output signal
  Sent when the ready condition signal has been received but the light SW tail, light SW head, and parking brake SW signals have not been received.
  Sent when the ready condition signal has been received but the parking brake switch signal and the illuminance information from the light control have not been received while receiving the light switch auto signal.

(3) The multiplex network body ECU controls the following based on the signals listed in (2):
- Headlamp (Low)

(d) Light auto cut system

(1) The multiplex network body ECU receives the following:
- Light SW tail signal
- Light SW head signal
- Light SW auto signal
- Front fog SW signal
- Power SW signal
- Light control signal
- Driver's seat courtesy SW signal

(2) The multiplex network body ECU controls the following based on the signals listed in (1).
- HEAD relay ON signal
  Terminates communication when the power switch ON (IG) signal terminates and the driver's seat courtesy SW signal is received while sending the HEAD relay ON signal. The HEAD relay ON signal results from receiving the light SW head signal and illuminance information from the light control signal.
- TAIL relay ON signal
  Terminates communication when the power switch ON (IG) signal terminates and the driver's seat courtesy SW signal is received while sending the TAIL relay ON signal. The TAIL relay ON signal results from receiving the light SW head signal and illuminance information from the light control signal.

(3) The multiplex network body ECU controls the on/off operation of the following based on the signals listed in (2).
- Headlamp (low)
- Headlamp (high)
- Clearance lamp
- Side marker lamp
- Front fog lamp
- Taillamp
- License plate lamp

(e) Illuminated entry system

(1) The multiplex network body ECU receives the following:
- D/P/RR/RL seat door courtesy SW signal
- D seat door lock signal
- P seat door lock signal (w/ Smart Key, w/ Security System)
- Power SW signal

(2) The multiplex network body ECU controls the following based on the signals listed in (1):
- Illumination ON demand signal
  Sent when the respective door courtesy SW signals are received.
  Sent when the respective door lock signals are received.
  Sent when the power switch ON (IG) and power switch ON (ACC) signals are not received.

(3) The multiplex network body ECU controls on/off and fade–in/fade–out operations of the following based on the signals listed in (2):
- Key slot lamp
- Room lamp No.1
- Personal lamp (Overhead J/B)

(f) Auto headlamp leveling system

(1) The headlamp beam level control ECU receives the following:
- HEAD relay ON signal
- Vehicle height sensor signal
- Vehicle speed signal

(2) The headlamp beam level control ECU controls the following based on the signals listed in (1).
- Leveling motor operation demand signal
  Sent based on the vehicle height sensor signal and vehicle speed sensor when the HEAD relay ON signal is received.
  The headlamp beam level control ECU receives vehicle speed signal and determines the driving condition according to the table below, and then starts/terminates controlling on the headlamp leveling actuator.

Vehicle Speed	Mode	Control
Less than 0.7 km/h (0.4mph)	While stopping	Controls
More than 30 km/h (19 mph) or less than 180 km/h (112 mph)	While driving at constant speed	Controls
More than 30 km/h (19 mph) or less than 180 km/h (112 mph)	While accelerating	Does not control
More than 180 km/h (112 mph)	While driving at high speed	Does not control
More than 0.7 km/h (0.4 mph) or less than 30 km/h (19 mph)	While driving at low speed	Does not control

(3) The headlamp beam level control ECU controls the following based on the signal listed in (2).
- Headlamp beam leveling actuator