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CONFIDENTIAL

SET A

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION

JANUARY 2014 SESSION

SUBJECT CODE	:	**FVD 24402**
SUBJECT TITLE	:	**COMFORT SAFETY AND INFORMATION SYSTEM**
LEVEL	:	**DIPLOMA**
TIME / DURATION	:	**(2 HOURS)**
DATE	:	

INSTRUCTIONS TO CANDIDATES

1. **Please read the instructions given in the question paper CAREFULLY.**
2. **This question paper is printed on ONE side of the paper.**
3. **Please write your answers on the answer booklet provided.**
4. **Answer should be written in blue or black ink except for sketching, graphic and illustration.**
5. **This question paper consists of TWO (2) sections. Section A and B. Answer all questions in Section A. For Section B, answer TWO (2) questions only.**
6. **Answer all questions in English.**

THERE ARE 8 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 60 marks)
INSTRUCTION: Answer ALL questions.

Question 1

a) Explain **TWO(2)** basic mode of MUX method in term of channel bandwidth and time, signal and particular phase, frequency or time.

(4 marks)

b) List **THREE(3)** reasons why MUX is applied in nowadays vehicular electrical system?

(6 marks)

c) Sketch a VAN protocol and CAN protocol, your sketching must include the signal shape of Data, $\overline{\text{Data}}$, CANL and CANH. (8 marks)

d) Explain why MUX data wire are twisted together. (2 marks)

Question 2

From the X-Sara II vehicle synoptic diagram for the door management system, please list down the:-

a) 4 input signal (A) to BSI (4 marks)

b) 2 output signal (B) from BSI (2 marks)

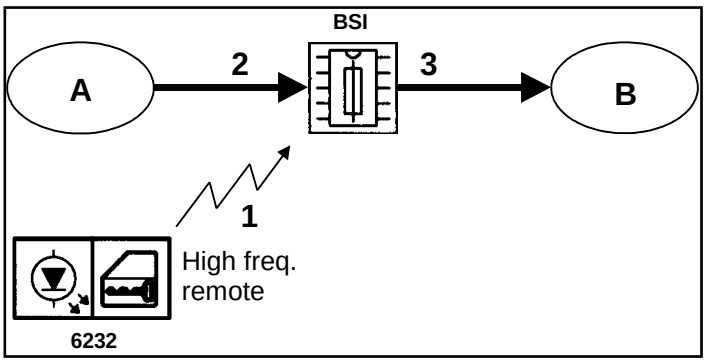

Figure 1: vehicle synoptic diagram for the door management system

Question 3

By referring to the figure 2 and figure 3, the C5 vehicle Sun roof system:-

a) List down **TWO** functions that will operate the sun roof automatically. (4 marks)

b) From the synoptic diagram in *figure 2* below, explain the flow of information for the ***automatic function or multiplex connection*** only. (10 marks)

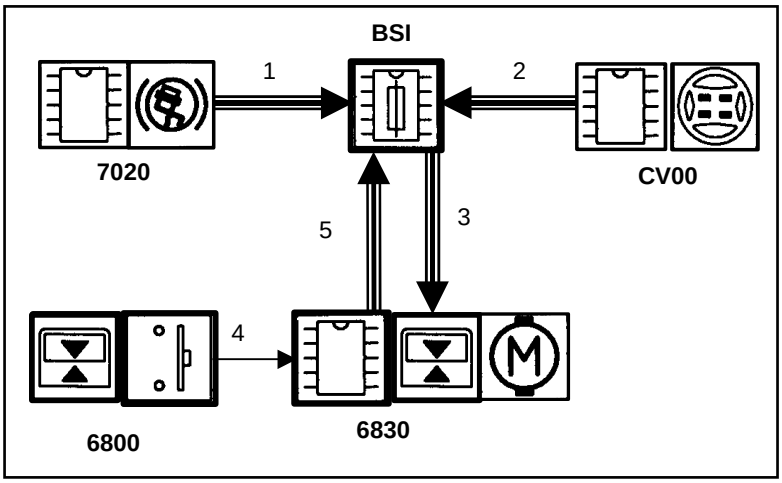

Figure 2: C5 vehicle sunroof synoptic diagram

No.	Components
BSI	Built-in systems interface
6830	Sunroof ECU
6800	Sunroof switch
7020	ABS ECU
CV00	COM 2000

Figure 3: List of C5 vehicle sunroof component

Question 4

Create a **BASIC** electrical schematic diagram to operate the electric window lifter motor.

(10 marks)

Question 5

Draw a polarity switch and explain briefly how to check the switch functionability.

(10 marks)

SECTION B (Total: 40 marks)

INSTRUCTION:Answer TWO (2) questions only.

Question 1

The following case study is for a typical devices and circuit problem that technicians are often required to diagnose. Knowledge of the circuit and test procedures can help you to diagnose the circuit safely and efficiently.

Customer Complaint

By referring to Proton Savvy Power window system wiring diagram, a customer complains that **ALL** power window is not working.

Known Information

- Vehicle operating voltage = 14 volts
- Supply to ignition switch = 14 volts

Circuit Analysis

Answer the following questions by referring to Proton Savvy Power Window Wiring diagrams in **figure 4 and figure 5.**

i) State the most likely cause for the power window to be malfunctioning?

(6 marks)

ii) List diagnostic steps which are helpful when troubleshooting this system. Explain by using a chart diagram.

(10 marks)

iii) Explain how to fix the problem if the one touch switch cannot be operated. (4 marks)

POWER WINDOW

WEW012AMECH036

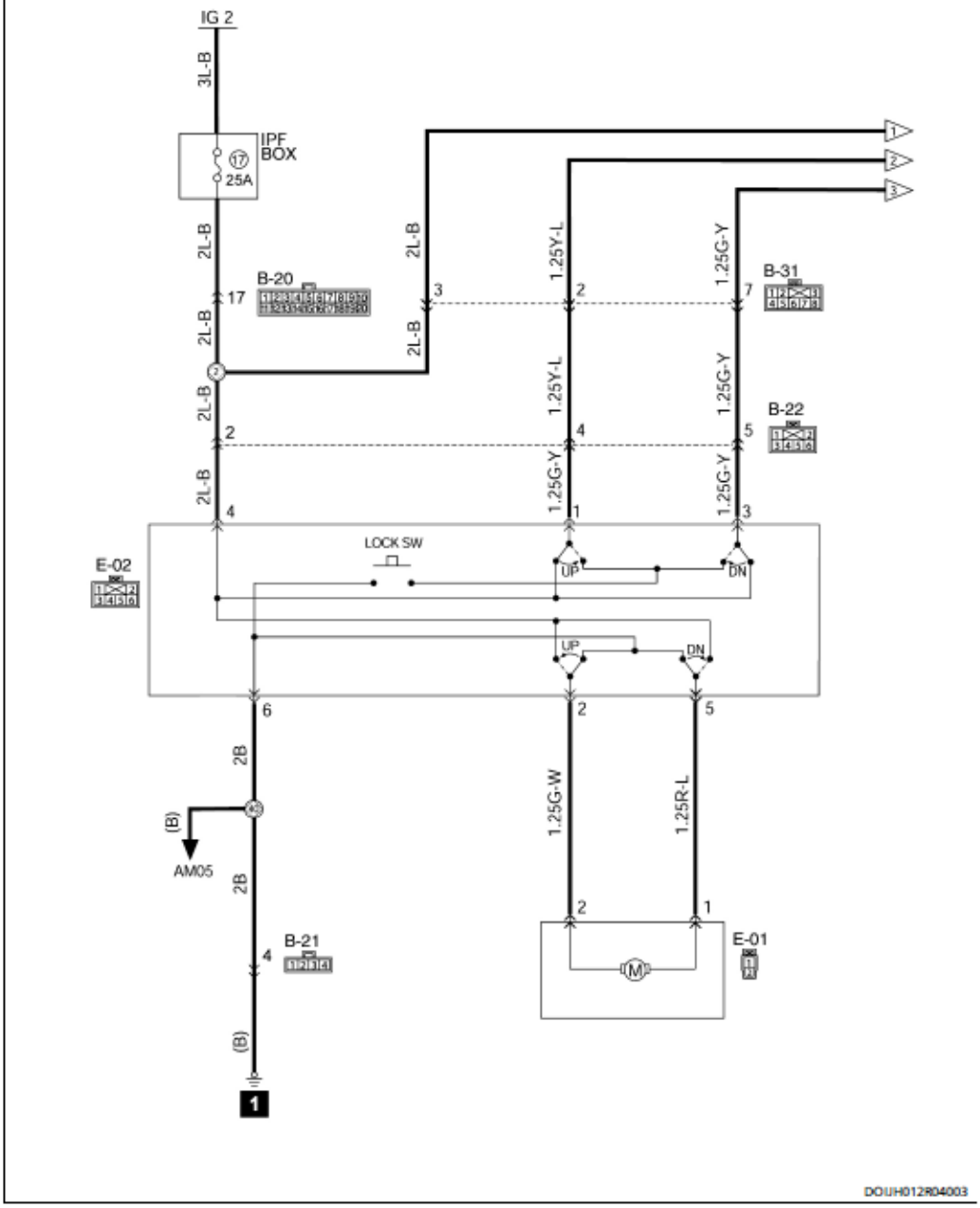

Figure 4

12 Assistant Mechanism
/3 POWER WINDOW

POWER WINDOW (Continued)

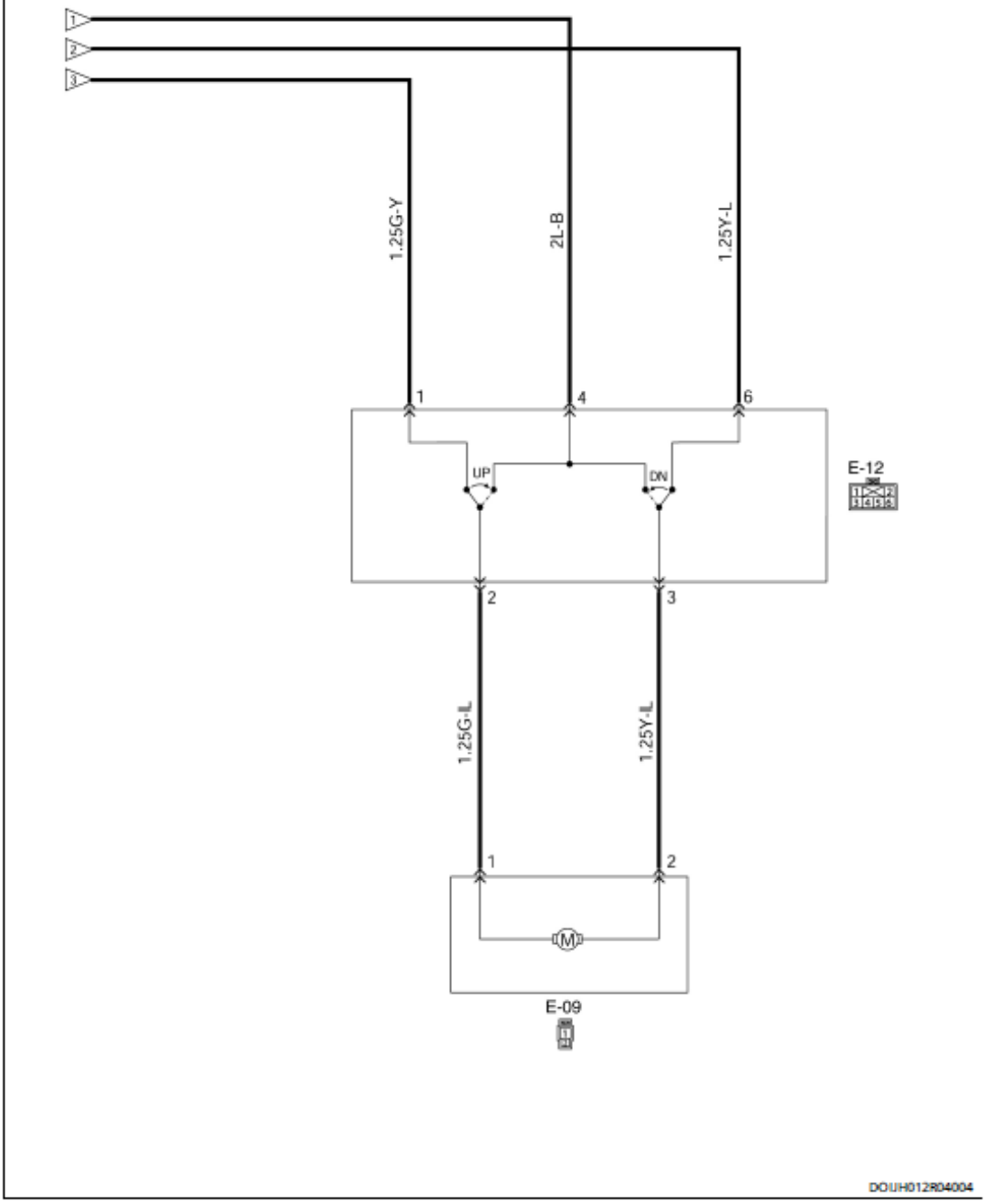

Figure 5

Question 2

The following case study is a typical seat adjustment system problem that technicians often need to diagnose. Knowledge of seat adjustment circuit and simple test procedures will help you perform the diagnosis quickly and efficiently. Please refer to the wiring diagram Citroen C5 vehicle attached in **figure 6.**

Customer Complaint

A customer came to the workshop with an electrical seat adjustment problem. The customer complained that the **BACKREST** seat adjustment system cannot function.

Known Information

- Vehicle operating voltage = 14 volt
- Wiring system is in good condition
- BSI operate correctly

Answer the following question.

i) List the diagnostic steps that would be used to find the suspected problem above. Explain by drawing a chart diagram. (15 marks)

ii) Explain how to ensure the seat adjustment power relay to be in good condition? (5 marks)

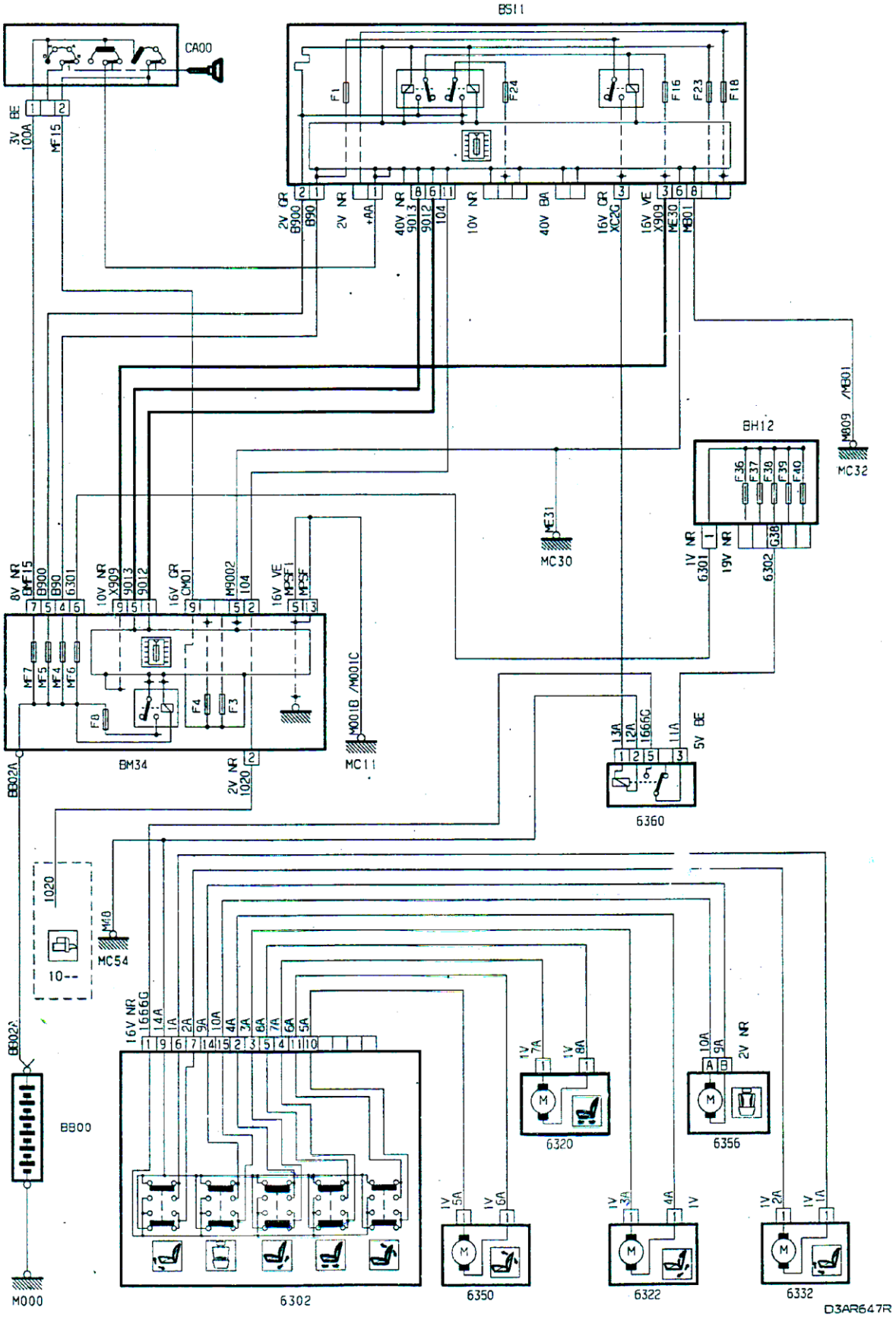
BS11
CA00
BH12
MC32
MC30
BM34
MC11
6360
MC54
BB00
6302
6320
6356
6350
6322
6332
M000
D3AR647R

Figure 6

Question 3

This case study is typical sun roof system circuit problem that technicians often need to diagnose. (Refer to the circuit diagram of central locking for Proton Arena **in figure 7**).

Customer Complaint
The central locking system switch need to hold in lock position or unlock position for a few second before all the door lock knob going down.

Known Information

- Battery voltage = 14 volts
- the fuse box in good conditions

Answer the following questions on an answer paper given.

i) With the above known information, state the most likely cause for the inoperative central locking system above?

(8 marks)

ii) Explain what would happen to the system if the **FUSE 2** is fused.

(4 marks)

iii) Explain what would happen to the system if **PIN No 2** at connector **E15** is disconnected? (8 marks)

CENTRAL DOOR LOCKING SYSTEM

WEW012AMECH010

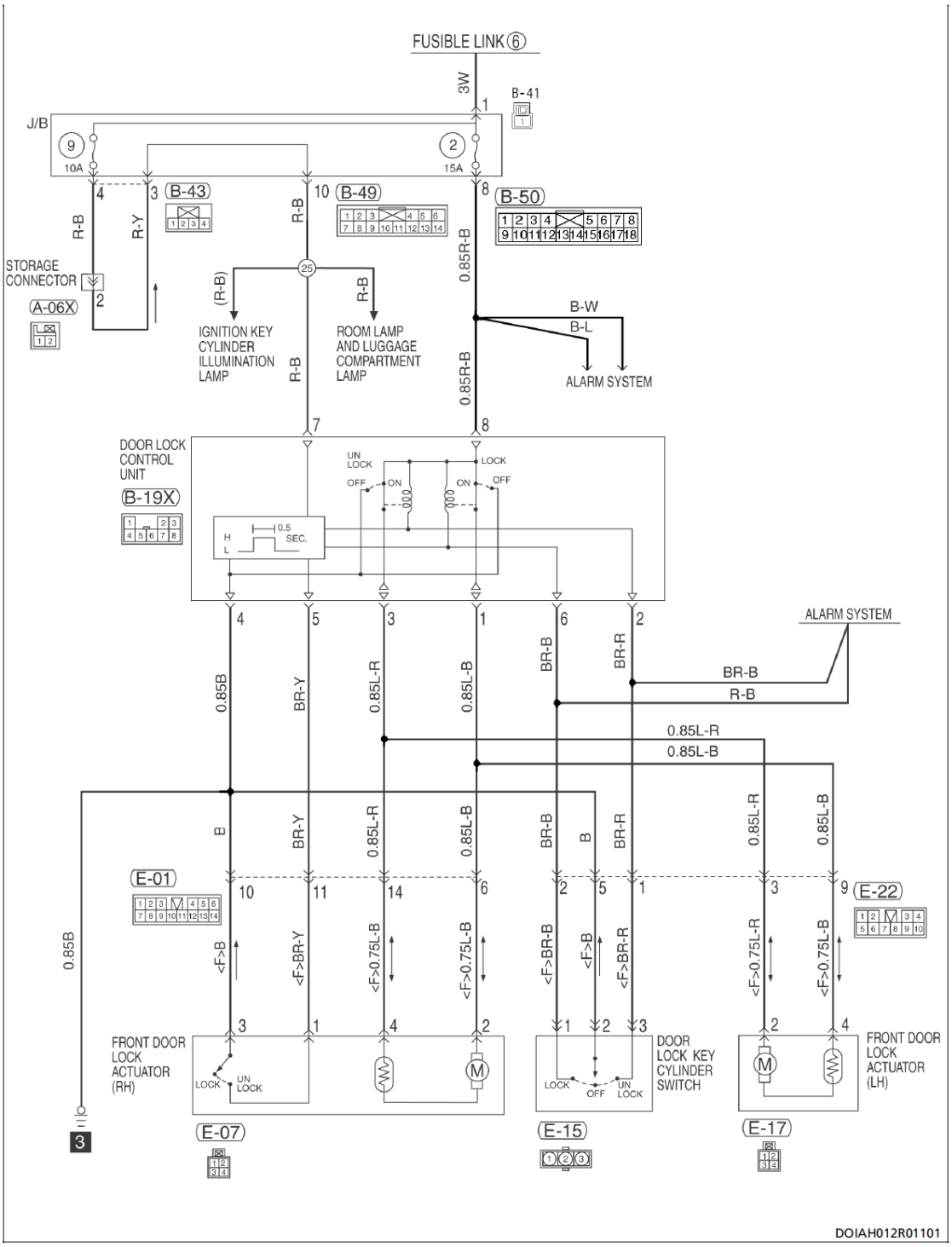

Figure 7

END OF QUESTION