

TOURING



Electronics and wiring manual

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**TS35**

9020-187Y

Rev.-05

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RPPR7L1





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PAGE REVISION CONTROL TABLE

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PAGE REVISION CONTROL TABLE

REVISION PAGE	REVISION DATE	REVISION NO	SERVICE BULLETIN NO	DESCRIPTION
01.04.A.w-2 03.04.A.w-16 06.04.B.w-4 07.04.A.w-2 07.04.A.w-8 10.04.A.w-1 11.04.A.w-1 16.04.L.w-1 20.04.A.w-1 25.04.A.w...	01.01.2012	01		Add component, no: 30A003, Release component, no: 01S004 pin:7, Release component, no: 06A001 pin:7, Release component, no: 07A001 pin:D26 and D30, Release component, no: 07A001 pin: C30, Release component, no: 10S001 pin: 1,3 and 4, Add component, MicroSwitch Release component, Added diode, Release component, no:20R002, Added Inverter System
02.04.A.w-1 and -3 07.04.A.w-2 11.04.A.w-2	16.03.2012	02		Add component, no: 02K012, Release component, no: 07A001 pin:D19 , Release component, no: 11S002 pin:3 ,
11.04.A.w-2 11.04.A.l-1	02.08.2012	03		Release component, no: 11S034,
	12.10.2012	04		Release component, all fuses in fuse blocks and all fuse decriptions. Added 27. System
03.04.A.w-6 03.04.A.w-8	15.01.2013	05		No. 16-100 and 16-101 socket on the representations of cables has been canceled. No. 16-101 pin cable have been corrected.

Note: Visit e-doc.temsa.com online for the latest version.

# 00

## FOREWORD

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## 00.1.1 General Information

### The Aim of this User's Manual

The Electrical Wiring Manual is prepared to explain how to service your vehicle in the safest and most efficient way.

Safety instructions given in this manual are intended to protect persons and properties.

Therefore, before operating the vehicle or before carrying out any maintenance work, read this manual completely and carefully.

Any injury or damage arisen from noncompliance with the safety instructions given in this manual is the responsibility of that vehicle's owner.

This manual is intended to be used commonly for all variants of TOURMALIN CUMMINS EURO 5. Therefore some properties of your vehicle may not comply with those indicated in this manual.

### Use of Genuine Parts and Accessories

For a safer and longer service life of the vehicle, use only TEMSA genuine spare parts, accessories or parts which have been approved and tested by TEMSA.

All genuine parts have been approved by TEMSA by means of testing their reliability, endurance and safety factors.

TEMSA does not take any responsibility for any injury or damage due to use of non-approved third party products.

Any alteration of the vehicle may interfere with safety features built into the vehicle and may lead to an accident resulting in serious injury or death.

### Service and Maintenance

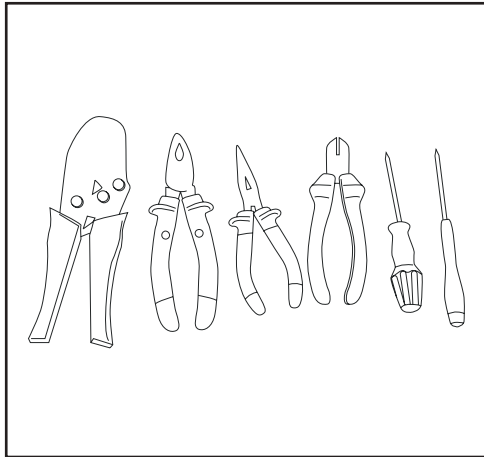
The service and maintenance operations should be carried out by authorized services and be in compliance with TEMSA directives.



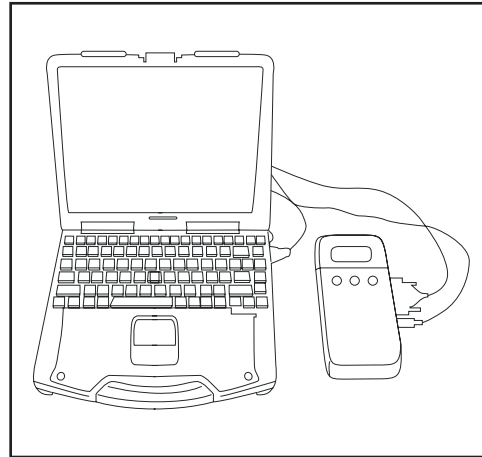
#### WARNING

Technical information and properties of the vehicles stated within this Electrical Wiring Manual are valid on the date of issue. TEMSA reserves the right to make any necessary changes to the features of its products without giving any advance notice.

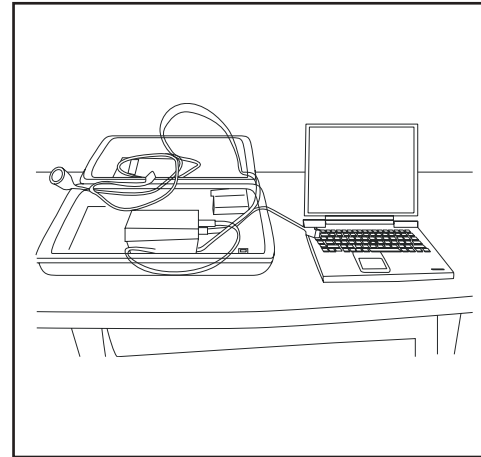
## 00.1.2 Tools



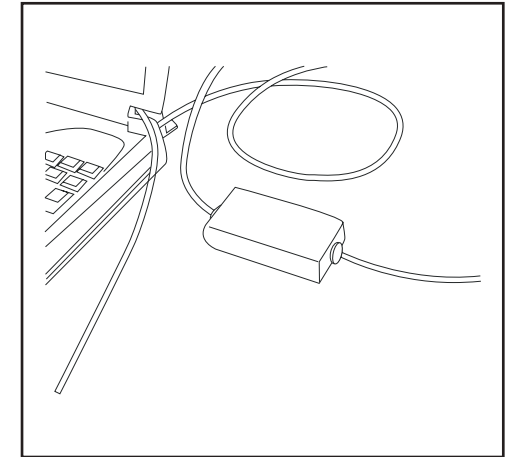
General Tools



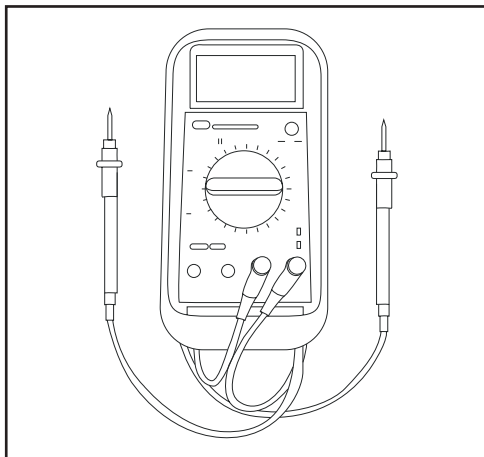
Mitsubishi Diagnostic Tool ( MUT III )



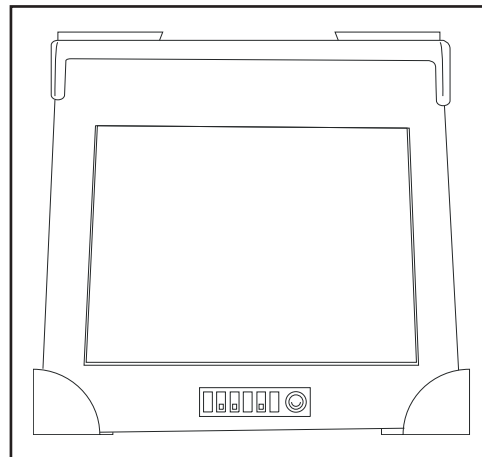
MAN Engine Diagnostic Tool ( MANCAT )



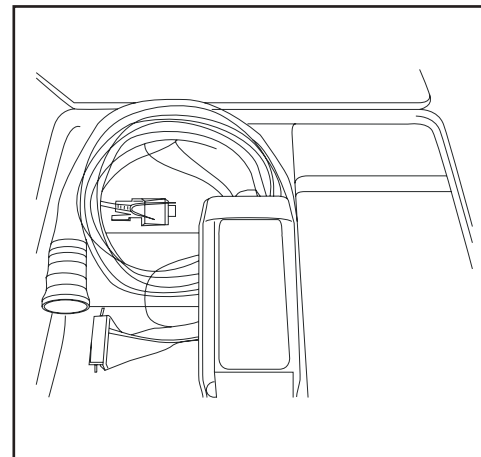
KIBES K-Line Interface Cable



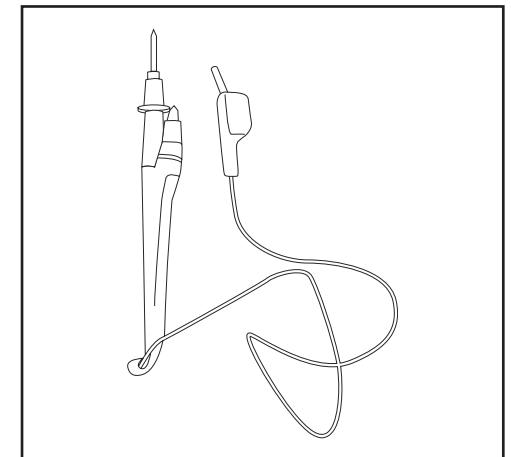
Multimeter



DAF Engine Diagnostic Tool ( DAVIE )



CAT Engine Diagnostic Tool ( CATET )



Connection Wire

## 00.1.3 Warnings

### Symbol List

Operating Instructions in this manual includes the following symbols, warning words and signs:



#### **CAUTION**

This symbol is used in conditions which may cause damage or injury if necessary measures are not taken.



#### **VISUAL INSPECTION**

This symbol is used to inform the user that a visual inspection is necessary.



#### **WARNING**

This symbol is used in conditions which may cause severe damage or fatal injury if necessary measures are not taken.



#### **DANGER**

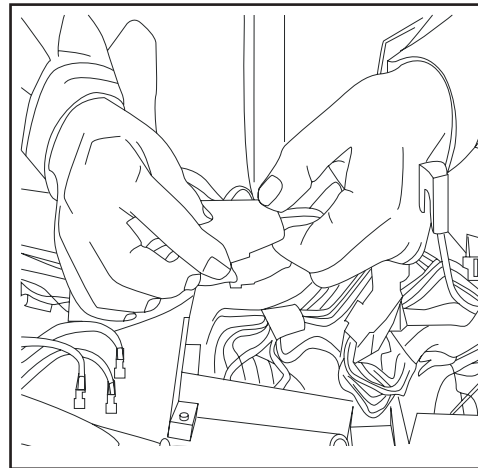
This symbol is used to indicate danger.



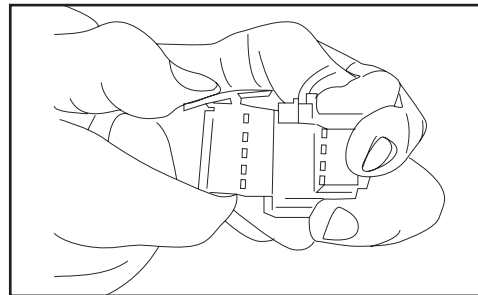
## 00.1.3 Warnings

### Safety Precautions

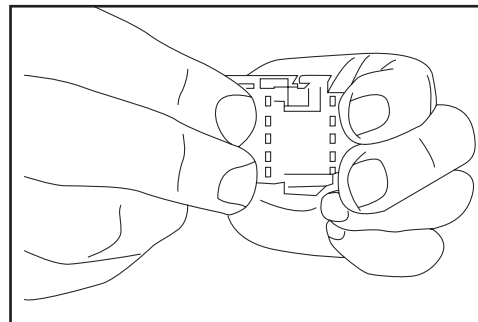
The following safety instructions must be strictly observed.



1. Hold the connector.



2. To disconnect locking type connectors push it in the direction indicated by an arrow.



3. To connect a lock type connector, plug it until a click is heard.

## 00.1.4 Control Units Handling & Repair Precautions



### CAUTION

Observe the following precautions when handling or servicing the control units (Engine EDC, Retarder ECU, etc.).

- a) Make sure that the control units does not contact directly with rain-water, car-washing water etc. If the control units soaks, wipe it immediately.
- b) Avoid unnecessary removal or painting of the cover.
- c) To remove the control unit from the vehicle, follow steps mentioned in the page 0-08.
- d) Apply arc welding for the repair of the vehicle parts steps mentioned in the page 0-09.



### CAUTION

Cautions during washing the vehicle:

- a) Before washing the vehicle, make every electrical equipment waterproof (by covering it with vinyl sheet etc.)
- b) Do not wash the electrical harness and waterproof connectors.



### CAUTION

During washing the vehicle do not splash pressured water in Fuse Room and to the battery.

## 00.1.5 Cautions Before Service Work



### CAUTIONS

Be sure to use correct tools in the correct place for servicing as mentioned below:

- a) Use Fuse Holder for removing of fuses.
- b) Use Multimeter or a 24V Controllamp to search for short-circuits if vehicle has not multiplex system.
- c) If there is a multiplex system, remember that there is always 12V check voltage in Diagnostic System. Therefore use only Multimeter to check whether the circuit of the system is short or open. Do not use Control lamp or others. Otherwise you could make a mistake to understand the short or open circuit.
- d) Use diagnostic tool to check Engine EDC or UPEC. (Note: A diagnostic tool for Cummins Engine is not existing ).
- e) Use Kibes Runtime Software and K-Line interface cable to check Multiplex system control.



### CAUTION


Precautions for multiplex System program installation

Following instructions must be strictly observed during installation of program to the system.

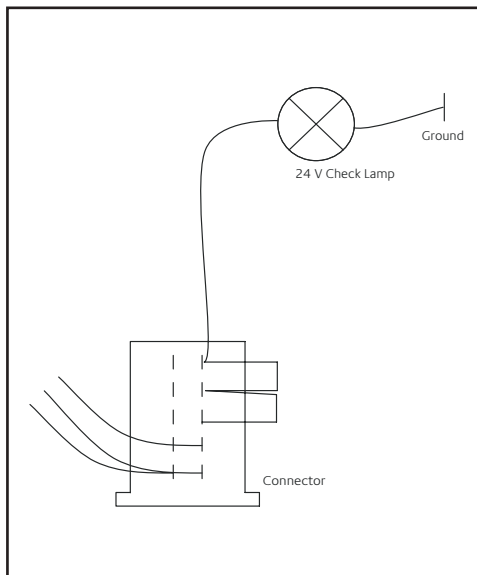
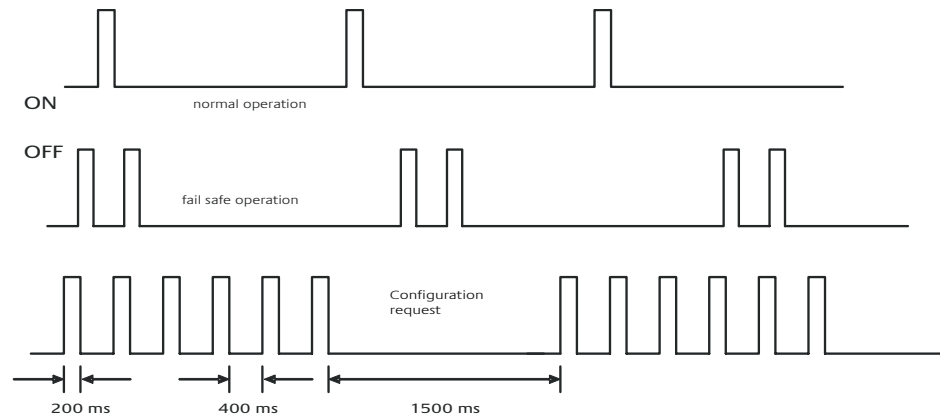
- Do not install program to the system if there is a person under the vehicle.
- If the program installed to the system while the vehicle is in lifting position, lifting valves can release air and vehicle can go down.
- Power supply should not be closed while installing program to the system. Wait until the installation is completed.
- Program should not be installed while engine is in operating conditions. Otherwise engine stops unsuitable conditions.

## 00.1.6 Cautions Before Service Work

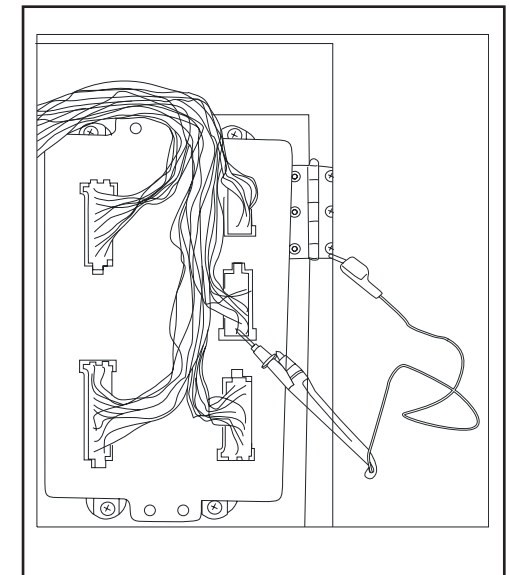
### Multiplex System Functional Checks



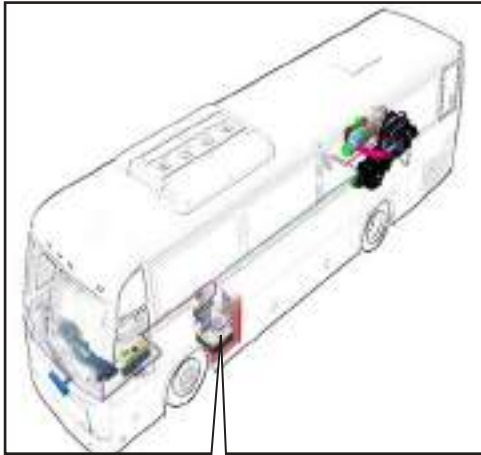
**CAUTION**  
External node diagnosis:  
To AUS\_ID\_PLUS, a 2W bulb in connection  
with a 24 V power supply can be connected  
for functional checks.



Error Conditions	Cause of Failure
"FAIL SAFE" Operation	CAN-connection failed during operation
Configuration request	Incorrect node ID, incorrect node type or new node (node yet programmed)
OFF	Voltage Supply or CAN already defective or not present when turning on or node defective.
ON	Node defective, Voltage supply OK.



## 00.1.5 Cautions Before Service Work

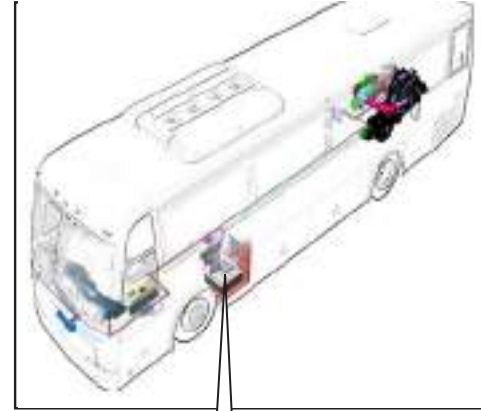


### CAUTIONS

Before servicing of electrical systems follow the below mentioned steps:

- Turn the Ignition key to OFF position.
- Turn the Battery Cut Off switch to ON position.
- Check the system failure.

**Note:** Remember that Battery Cut Off Switch is an OPTION.

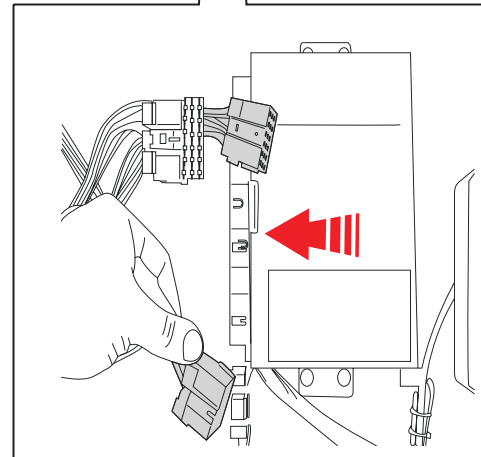
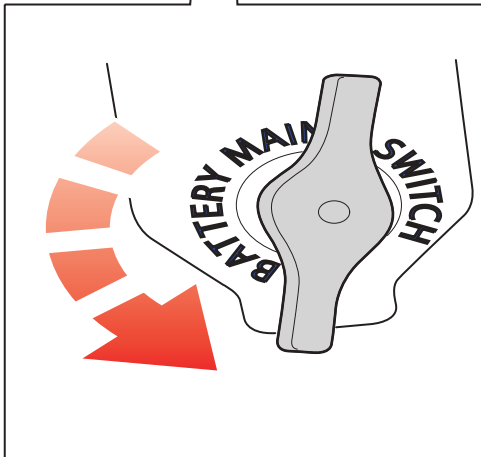


### CAUTIONS

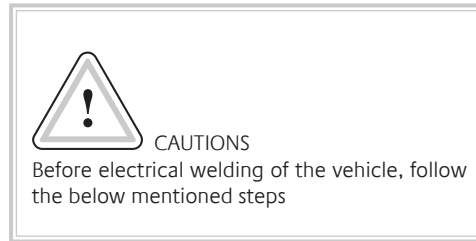
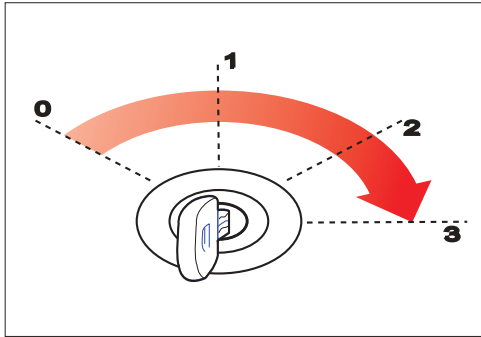
Before servicing of Electronic Control Units(ECU) follow the below mentioned steps:

- Turn the Ignition key to OFF position.
- Turn the Battery Cut Off switch to ON position.
- Disconnect all connectors of Electronic Control Unit
- Check the system failure.

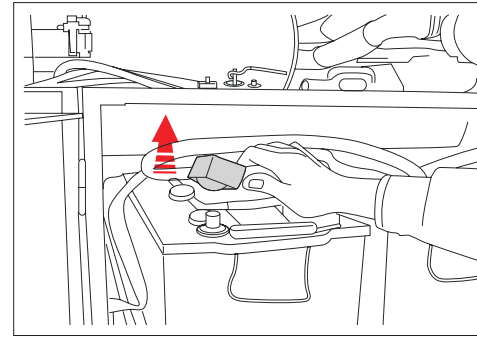
**Note:** Remember that Battery Cut Off Switch is an OPTION.



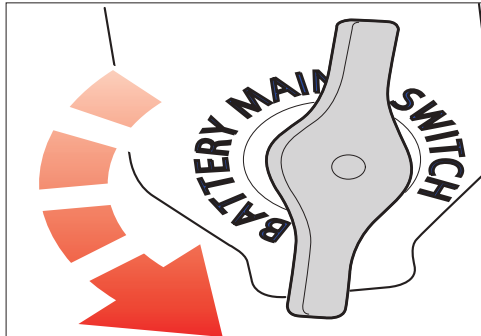
## 00.1.6 Procedures for Electrical Welding Application



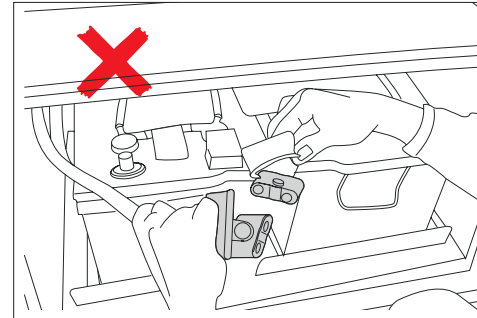
1. Turn the ignition key to OFF position.



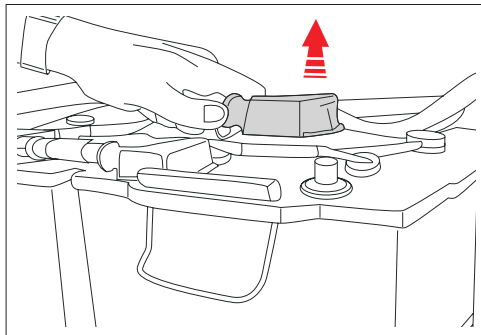
4. Disconnect Battery positive (+) terminal.



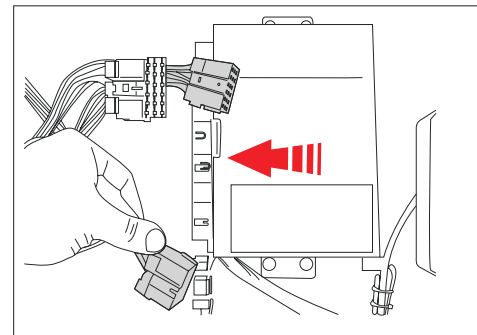
2. Turn the battery cut off switch to ON position.



5. Touch and joint negative and positive cables of vehicle to discharge static electric in the harnesses.



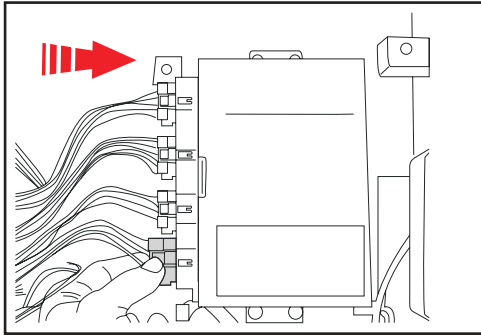
3. Disconnect Battery negative (-) terminal.



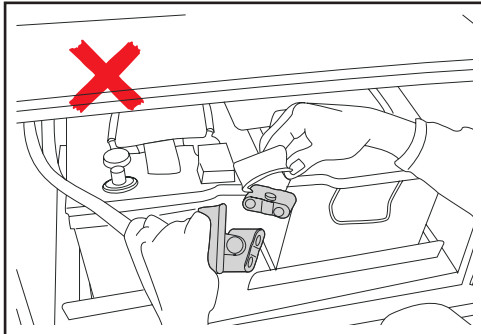
6. Disconnect connectors of all Electronic Control Units.

7. After the above mentioned steps are finished welding processes can be applied safely.

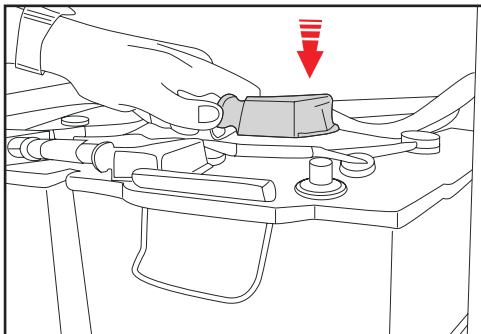
## 00.1.7 Procedures After Electrical Welding Application



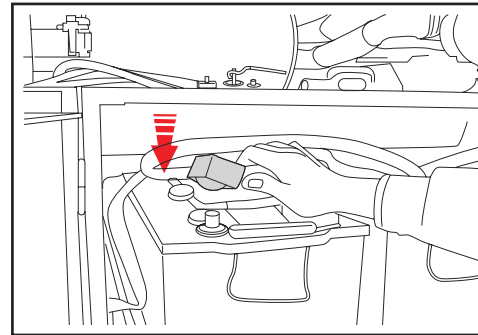
1. Connect all connectors of all Electronic Control Units.



2. Disjoint negative and positive cables of the vehicle.



3. Connect Battery negative (-) terminal.



4. Connect Battery positive (+) terminal

5. Turn the ignition key to ON position.

6. Turn the Battery Cut-Off switch to OFF position.

7. Now vehicle is ready to start.



































## 00.1.8 Possible failure causes for KIBES 32 products



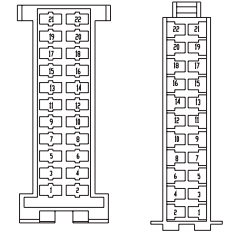
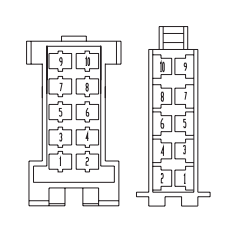
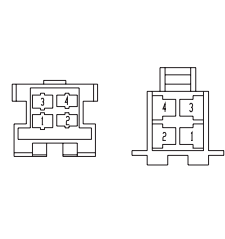
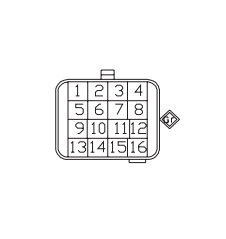
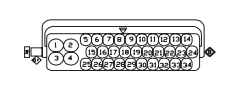
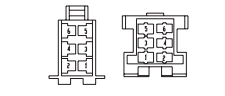
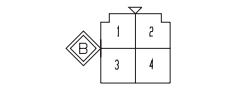

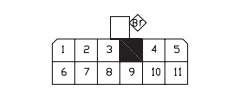
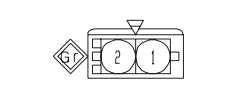
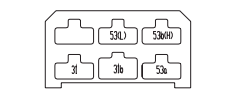
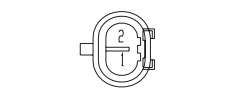
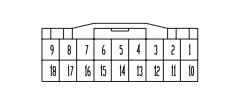
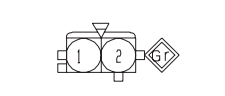
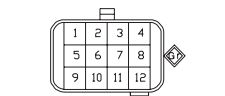
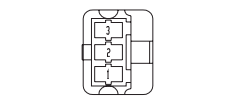
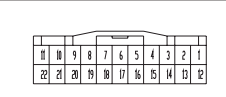
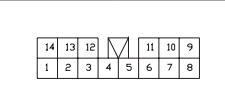
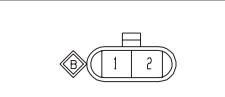
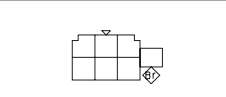
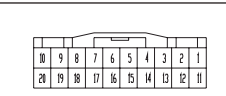
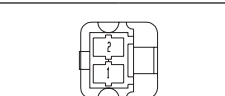
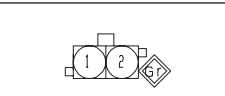
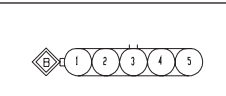
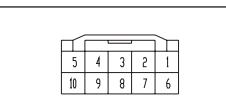
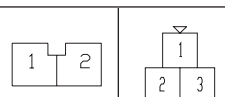
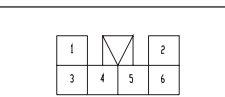
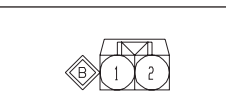
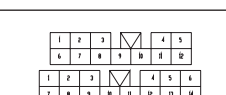
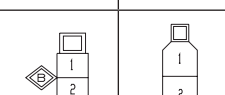
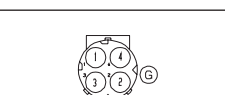
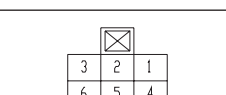
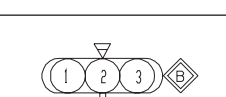
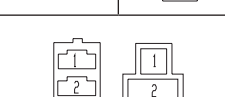
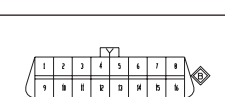
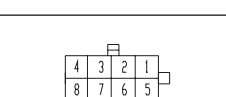
CAUTION

- Welding on the vehicle when KIBES-32 products are connected to the harness of the vehicle
  - Vehicle has been struck by lightning
  - ESD (electro-static discharge) by touching of connector pins by a person without protection against ESD (e.g. ESD shoes)
  - Exchange of KIBES-32 product during connection to power.  
(Before exchange, the KIBES-32 product has to be disconnected from power [e.g. switch off battery])
  - Overstress of outputs of KIBES-32 products.
- Some examples on base of the MUX2-B or MUX2-M are described below.

### 00.1.9 Symbols of Switch Lens

	Glass Heater Switch		Auxiliary Lamp Switch		Roof Heater Fan Motor Switch
	Mirror Heater Switch		Room Lamp Switch		Reverse Gear Horn Cancel Switch
	Hazard Switch		Reading Lamp Switch		Door Buzzer Cancel Switch
	Destination Plate Lamp		Driver Lamp Switch		School Bus Lamp Switch
	Lifting Switch	<b>WC</b> WC Power Switch	WC Power Switch		Bus Stop Brake Switch
	ASR Switch		Electrical Curtain Switch		Convector Control Switch
	Exhaust Brake Switch	<b>STOP START</b> Engine Start-Stop Switch	Engine Start-Stop Switch		Economy Switch
	ABS Switch	<b>UDS</b> UDS Switch	UDS Switch		Stairs Fan Control Switch
	Retarder Switch		Park & Room Lamp Switch		Wiper Water Switch
	Auto Lubricate		Front Fog Lamp Switch		Front Door Switch
	Horn Signal		Rear Fog Lamp Switch		Rear Door Switch
	Central Lock Switch		Motorfan Floor Switch		Driver Glass Switch
	Preheater Switch				

### 00.1.10 Socket Configurations

00A-11	TS35	Note:	TEMSA
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## 00.2.1 How to Use This Manual

### This manual consists of following parts.

- 1) General Information
- 2) System Chapters
- 3) Appendix

#### On General Information

Cautions before service work, warnings, symbols of switch lens, symbols and definitions, configuration of sockets and wiring harness configurations are shown.

#### On System Chapters

Wiring diagrams, locations of components, specifications, troubleshooting and OEM wiring diagrams are shown,

#### On Appendix

Locations of fuses on relay panels are shown,

## 00.2.2 Coding system of the Manual

XX.XX.X.X-X

- Indicates the page number of the chapter  
For example: x-1, x-2, t-1
- Indicates the chapter of the system
  - w: indicates the wiring diagram
  - l: indicates locations of the components
  - s: indicates specifications of the components
  - t: indicates the troubleshooting of the system
  - o: indicates the OEM wiring diagram of the system
- Indicates the parts of the system  
For example: "A" indicates transmission system for Voith option  
"B" indicates transmission system for ZF Astronic option
- Indicates the engine type of the vehicle
  - 00: indicates that chapter is valid for all types of engines
  - 01: indicates that chapter is valid for DAF engines
  - 02: indicates that chapter is valid for MAN engines
  - 03: indicates that chapter is valid for CAT engines
  - 04: indicates that chapter is valid for CUMMINS engines
  - 05: indicates that chapter is valid for MITSUBISHI engines
- Indicates the name of the system  
For example: "03" indicates engine control system  
"09" indicates ABS/ASR System

08.05.A.w-1: Indicates the brake system mitsubishi engine exhaust brake system wiring diagram page 1.

08.05.B.w-1: Indicates the brake system mitsubishi engine park brake system wiring diagram page 1.

## 00.2.3 Wiring Diagram Definitions

While looking to the wiring diagram on manual, you will see two pages. On the right hand side you will see electrical wiring diagram. Some symbols and codes exists on the diagram. On the left hand side you will see the explanations of the codes on the table, By looking to the part no, you can easily find the component code and definitions.

Code	Part No	Türkçe	English	Deutsch	Français	Italiano
01G001	2	Akı 1	Battery 1	Batterie 1	Batterie 1	Batteria 1
01G002	4-5	Akı 2	Battery 2	Batterie 1	Batterie1	Batteria 2
01G003	8	Alternatör 1	Alternator 1	Generator 1	Alternateur 1	Alternatore 1
01G004	7	Alternatör 2	Alternator 2	Generator 2	Alternateur 2	Alternatore 2
01K006	13-14	Start Aküleri Rölesi	Starter Batteries Relay	Relais Starterbatterien	Relais Batteries De Démarrage	Rele' Batterie Motorino Di Avviamento
01K015	16	Akı Kontrol Rölesi	Battery Control Relay	Relais Batteriesteuerung	Relais De Commande De Batterie	Rele' Controllo Batteria
01M001	10	Maş Motoru	Starter	Starter	Démarreur	Starter
01MF002	8	Alternatör Beslemesi	Alternator Power	Lichtmaschinenstrom	Alimentation De L'Alternateur	Alimentazione Alternatore
01MF003	18	Maş Motoru Beslemesi	Starter Power	Starter Strom	Alimentation Du Demarreur	Alimentazione Starter
01MF006	18	Klima Tavan Ünitesi Beslemesi	Air Conditioner Power	Strom Klimaanlage	Alimentation Du Climatiseur	Alimentazione Condizionatore D'Aria
01MF007	20	Röle Paneli K115 Beslemesi	Relay Panel K115 Power	Relaistafel Strom K115	Alimentation Du Panneau Des Relais K115	Alimentazione Pannello Rele' K115
01MF009	19	K130 Beslemesi 1	K130 Power 1	Strom 1 K130	Alimentation 1 Du K130	Alimentazione 1 K130
01MF019	17	Retarder Beslemesi	Retarder Power	Retarder Strom	Puissance Du Ralentisseur	Alimentazione Retarder
01MF022	25	Lift Ünitesi Beslemesi	Lift Unit Power	Strom Hebeeinheit	Puissance Du Mecanisme De Levage	Alimentazione Unita' Sollevamento
01MF023	19	Ön Röle Paneli K115 Beslemesi	Front Relay Panel K115 Power	Strom K115 Relaisstafel Vorne	Puissance Du Panneau De Relais Avant K115	Alimentazione Pannello Rele' Anteriore K115
01MF024	9	Alternatör Beslemesi 2	Alternator Power 2	Strom Lichtmaschine 2	Puissance D'Alternateur 2	Alimentazione Alternatore 2
01S001	7	Eİ Kumandali Ana Akü Şalteri	Main Manual Battery Switch	Handauptschalter Batterien	Interrupteur Principal A Main Batteries	Interruttore Manuale Principale Batteria
01X001	3-4	Akı Şarj Soketi	Battery Charge Connector	Batterieladeanschluss	Connecteur Du Chargeur De Batterie	Connettore Carica Batteria
02S009	5	Acil Durum Şalteri	Emergency Stop Switch	Notstoppschalter	Interrupteur Arret D'Urgence	Interruttore Arresto Di Emergenza
03K008	10	Motor Giriş Hava İsticisi Rölesi	Air Intake Heater Relay	Relais Heizung Luftansaugung	Relay CHAuffage Admission D'Air	Rele' Aria Di Aspirazione Riscaldatore
05A005	17	Retarder (Telma) Kumanda Modülü	Retarder Control Module (Telma)	Steuermodule Retarder (Telma)	Module De Commande Retardateur (Telma)	Modulo Di Controllo Retarder (Telma)
07P003	6	Tachograf (Dico Or Mtcö)	Tachograph (Dico Or Mtcö)	Fahrtsschreiber	Enregistreur De Trajets	Tachigrafo (Dico O Mtcö)
12A007	18	Klima Tavan Ünitesi (Safkar Ruthart)	Hvac Roof Control Module (Safkar Ruthart)	Module De Commande De Toit Hvac (Safkar Ruthart)	Module Di Controllo Tetto Hvac (Safkar Ruthart)	Modulo Di Controllo Tetto Hvac (Safkar Ruthart)
32X001w	25	Engelliler Asansör Sistemi	Handicapped Lift System Harness	Kabelbaum Rollstuhllift	Securisation Du Mecanisme De Levage Pour Handicapes	Cinghia Sistema Per Ascensore Per Disabili

01.04.B.w-1 Tourmalin Note:

The table shows the definitions of the codes that are on the diagram in many languages.

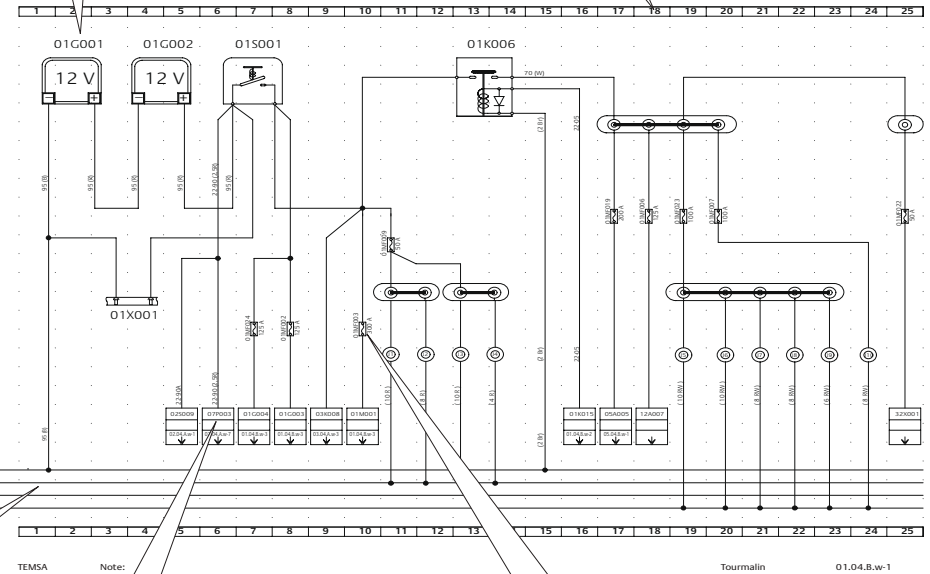
TEMSA

KL 31: Chassis Line  
KL 58: Park Lamp Power Line  
KL 30: Battery Power  
KL 15: Ignition Power

07P003: Indicates the code of the component.  
07.04.A.w-7: Indicates the page number.

01G001: Indicates the code number for the component.

01 to 25: indicates the position of the component on diagram.



KL 31  
KL 58  
KL 30  
KL 15

01MF003: indicates the fuse name.  
300 A: indicates the amper value of fuse. Fuse definition and location are shown in appendix.

00B-2

TS35

Note:

TS35

TEMSA

## 00.2.4 Wire Code Definitions

Wire characteristic as illustrated in Figure A.

- Background: White
  - 25-01 : Wire Code
  - 2,5 : Wire Size 2,5 mm<sup>2</sup>
- If there is not any number in parenthesis, wire size is 1mm<sup>2</sup>.



Shield wires are indicated as shown bellow (Figure C) to distinguish them from other wires.

Wire colours are shown with the capital letter of each colour.

When the capital letters of the colours are the same, they will be identified as follows:

R Red  
L Blue  
Br Brown

Where a stripe is added to the wire colour, a combination of two capital letters is used.e.g. :  
RY (Yellow stripe on red background)  
WB (Black stripe on white background)

Wire characteristic as illustrated in Figure B

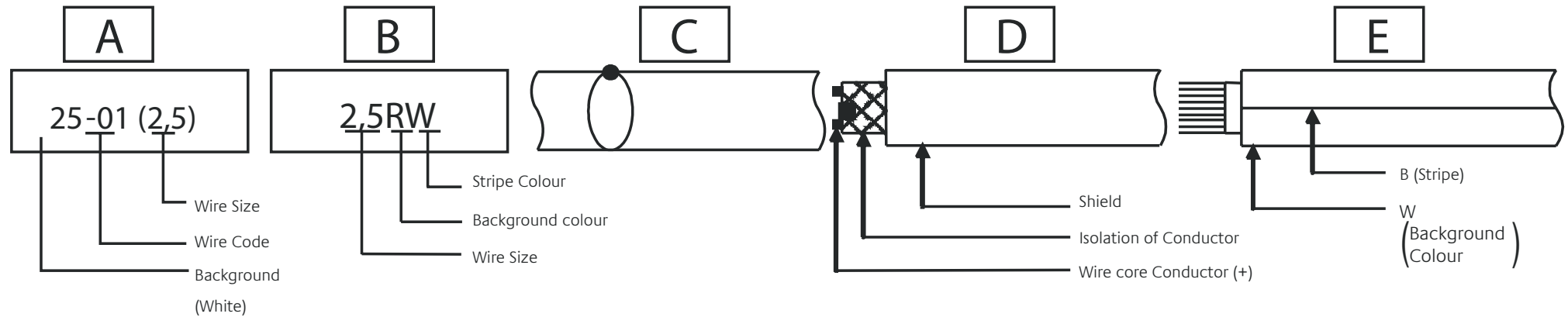
Wire size is indicated with the cross sectional area of conductor.

2.5RW

2,5: Cross sectional area of conductor is 2,5 mm<sup>2</sup>.

RW: Background colour is RED, Stripe colour is WHITE

No wire size is shown for a shielding wire but is



## 00.2.5 Wire Definitions

BACKGROUND & STRIPE COLOURS							
B	Black	LgR	Light Green/Red	VY	Violet/Yellow		
BG	Black/Green	LgY	Light Green/Yellow	W	White		
BL	Black/Blue	LgW	Light Green/White	WB	White/Black		
BR	Black/Red	LO	Blue/Orange	WG	White/Green		
Br	Brown	LR	Blue/Red	WL	White/Blue		
BrB	Brown/Black	LW	Blue/White	WR	White/Red		
BrW	Brown/White	LY	Blue/Yellow	Y	Yellow		
BrR	Brown/Red	O	Orange	YB	Yellow/Black		
BW	Black/White	OL	Orange/Blue	YG	Yellow/Green		
BY	Black/Yellow	P	Pink	YL	Yellow/Blue		
BrY	Brown/Yellow	PB	Pink/Black	YR	Yellow/Red		
G	Green	PG	Pink/Green	YW	Yellow/White		
GB	Green/Black	R	Red				
GL	Green/Blue	RB	Red/Black				
GR	Green/Red	RG	Red/Green				
GY	Green/Yellow	RL	Red/Blue				
GW	Green/White	RW	Red/White				
L	Blue	RY	Red/Yellow				
LB	Blue/Black	V	Violet				
LG	Blue/Green	VG	Violet/Green				
Lg	Light Green	VR	Violet/Red				
LgB	Light Green/Black	VW	Violet/White				

00B-4

TS35

Note:

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# 00C. WIRING HARNESS CONFIGURATIONS

## CONTENT

Chassis Wiring Harness .....00C-2

Roof Wiring Harness .....00C-3

Engine Room Wiring Harness .....00C-4

Front Body Wiring Harness.....00C-6

A/C Wiring Harness .....00C-7

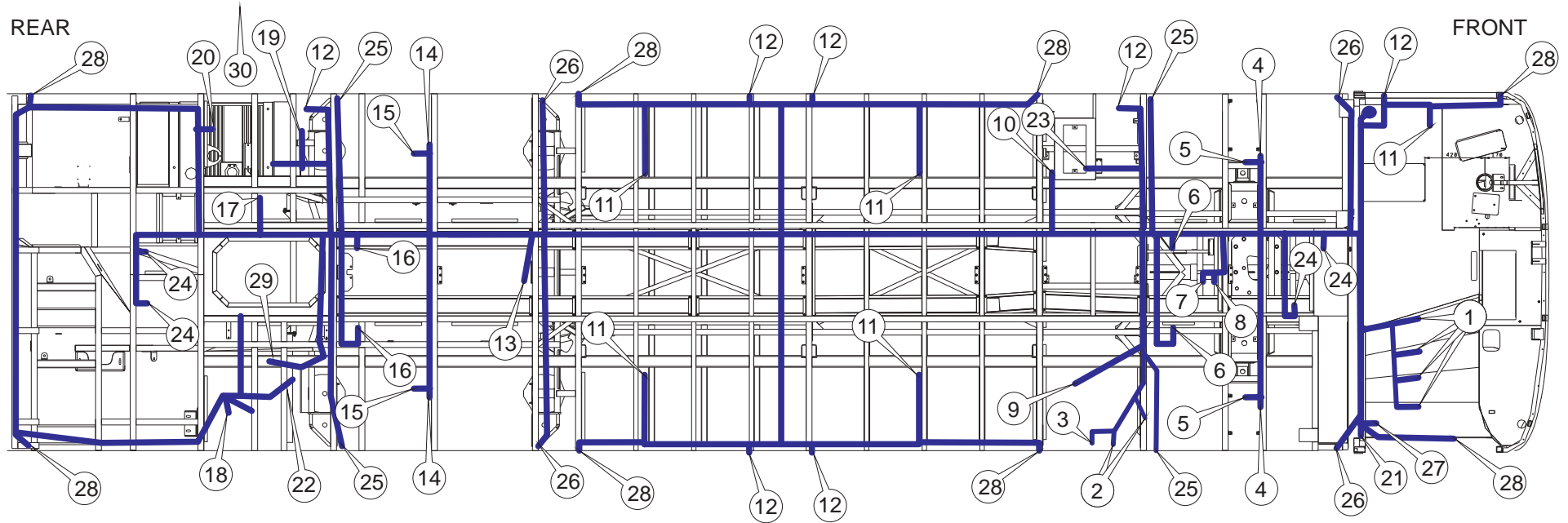
Dashboard Wiring Harness .....00C-8

SwitchBox Wiring Harness.....00C-10

Socket Connection Places .....00C-11

Spare Cable (Chassis Wiring Harness) .....00C-12

## CHASSIS WIRING HARNESS



NO	IDENTIFICATION	NO	IDENTIFICATION	NO	IDENTIFICATION
1	Front Door Step Lamp	11	Luggage Lamp	21	Door Micro Switch
2	Front Door Valve	12	Luggage Lamp Switch	22	Rear Relay & Fuse Room Lamp
3	Front Door Pressure Switch	13	Air Dryer	23	Front Relay & Fuse Room Lamp
4	Brake Lining Sensor ( Front )	14	ABS Sensor ( Rear )	24	Foot Lamp
5	ABS Sensor ( Front )	15	Brake Lining Sensor ( Rear )	25	Rerverse Gear Lamp
6	ABS Valve ( Front )	16	ABS Valve ( Rear )	26	Signal Lamp
7	Lifting Valve	17	Diagnose Socket (Preheater)	27	Door Micro Safety Switch
8	Kneeling Valve	18	Rear Relay & Fuse Panel	28	Marker Lamp
9	Fuel Tank Level Sensor	19	Preheater Water Pump	29	Dosing System ECU & Ad blue Tank Sen.
10	Front Relay & Fuse Panel	20	Roof / Floor Water Valve	30	Power Socket (Preheater)

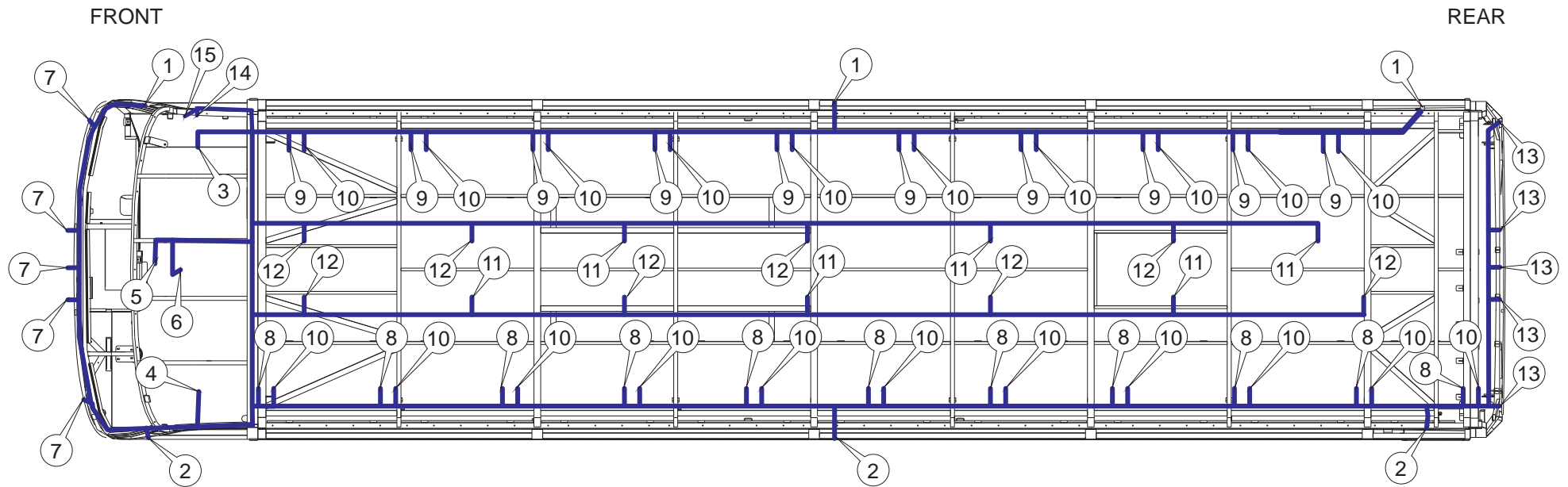
TEMSA

Note :

TS 35

00C-2

# ROOF WIRING HARNESS



NO	IDENTIFICATION	NO	IDENTIFICATION	NO	IDENTIFICATION
1	Position Lamp (Right Side)(Top)	6	Clock	11	Auxiliary Lamps
2	Position Lamp (Left Side)(Top)	7	Position Lamp (Front) (Top)	12	Interior Lighting Lamps
3	Front Door Upper Lamp	8	Left Speaker	13	Position Lamp (Reart) (Top)
4	Driver Lamp	9	Right Speaker	14	Front Door Valve
5	Monitor Supply	10	Reading Lamp	15	Front Door Pressure Switch

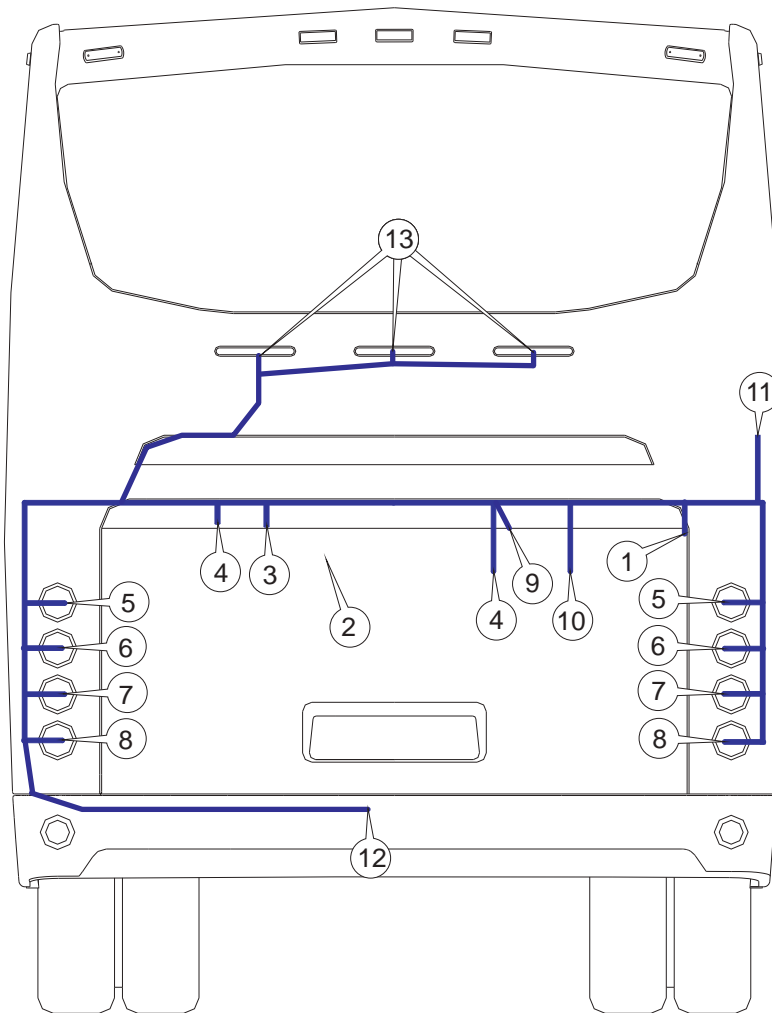
Note :

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TS 35

00C-3

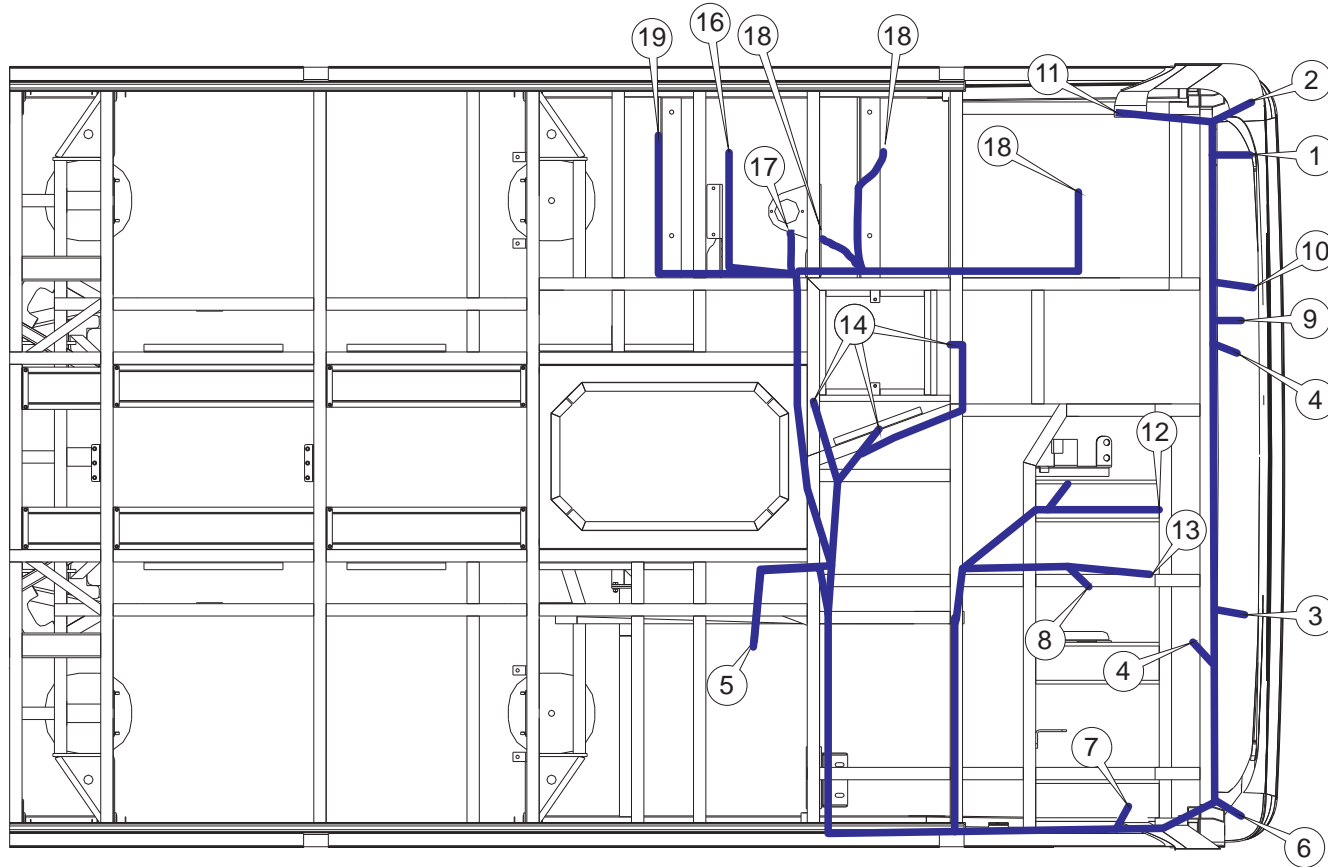
## ENGINE ROOM WIRING HARNESS



NO	IDENTIFICATION
1	Engine Room Safety Switch
2	Fire Warning Sensor
3	Antifreeze Tank Level Sensor
4	Engine Room Lamps
5	Rear Signal Lamps
6	Stop & Park Lamp
7	Park Lamp
8	Reverse Gear Lamp
9	Reverse Gear Buzzer
10	Start-Stop Switch
11	To Wc Unit
12	Trailer Socket (Option)
13	3rd Stop Lamp



# ENGINE ROOM WIRING HARNESS



NO	IDENTIFICATION	NO	IDENTIFICATION	NO	IDENTIFICATION	NO	IDENTIFICATION
1	Engine Room Safety Switch	6	Head Lamps (Left)(Rear)	11	To Wc Unit	16	Dosing System ECU
2	Head Lamps (Right)(Rear)	7	Radiator Valve	12	Alternator 1	17	Supply Module
3	Antifreeze Tank Level Sensor	8	Fire Warning Sensor	13	Alternator 2	18	UREA Tank Sensor
4	Engine Room Lamps	9	Reverse Gear Buzzer	14	Foot Lamp	19	Rear Power Fuses Box
5	Rear Electrical Connection box	10	Start-Stop Switch	15	Engine ECU Connectors	20	DPF System Sensors

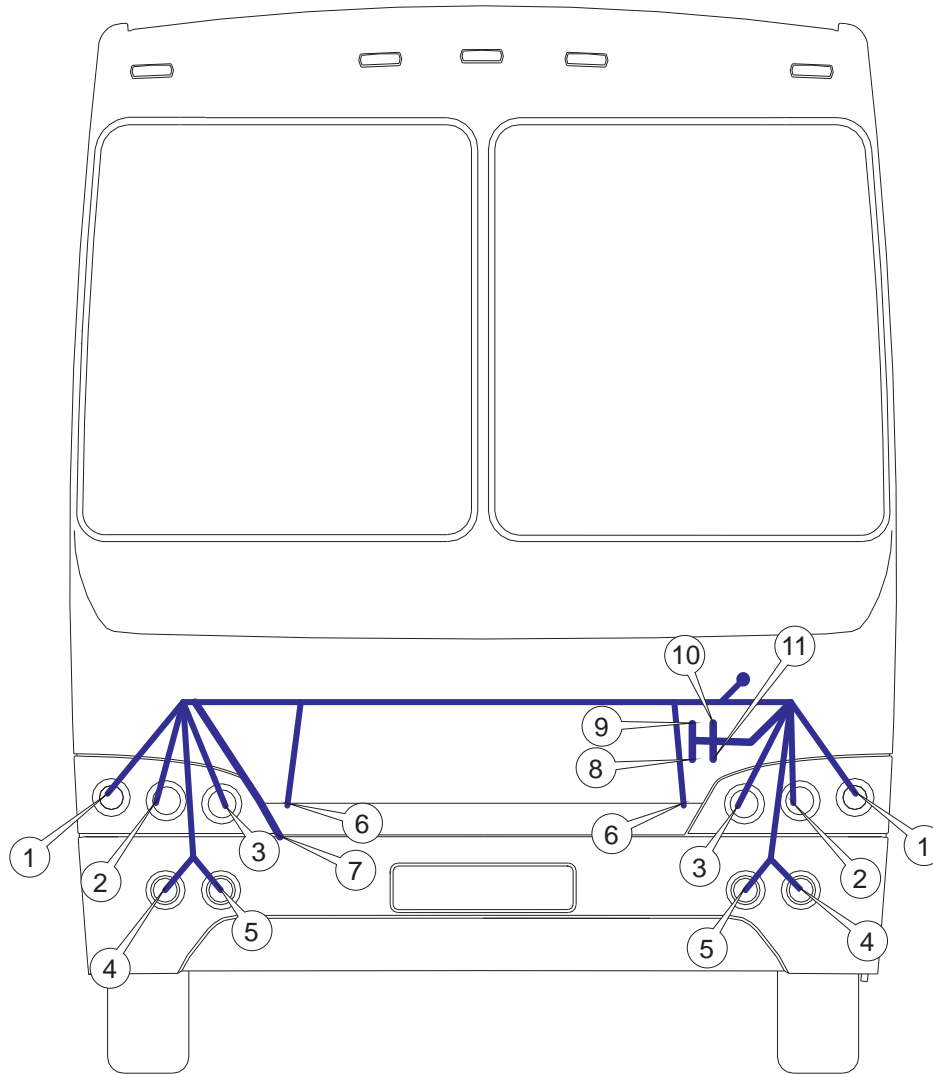
Note :

TEMSA

TS 35

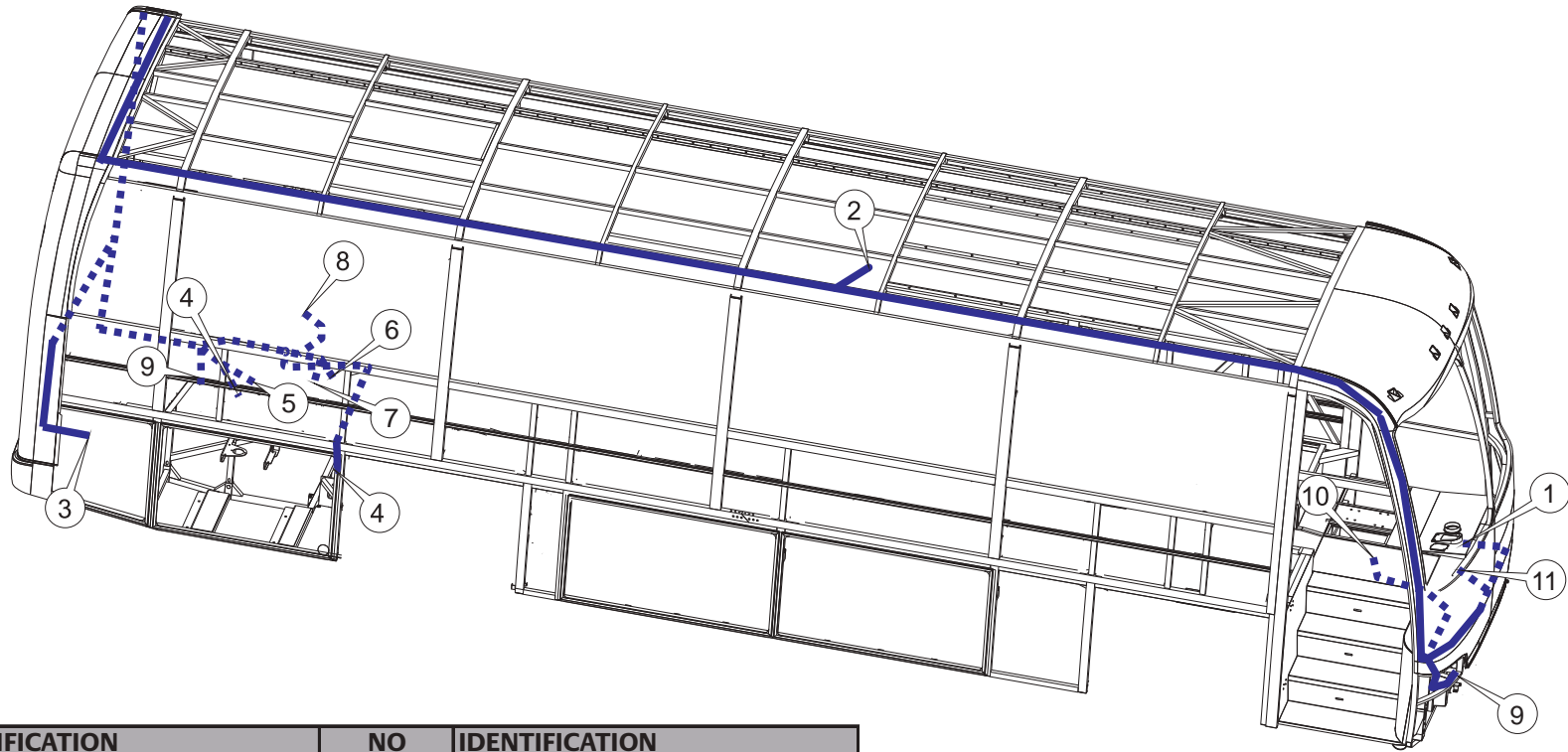
00C-5

## FRONT BODY WIRING HARNESS



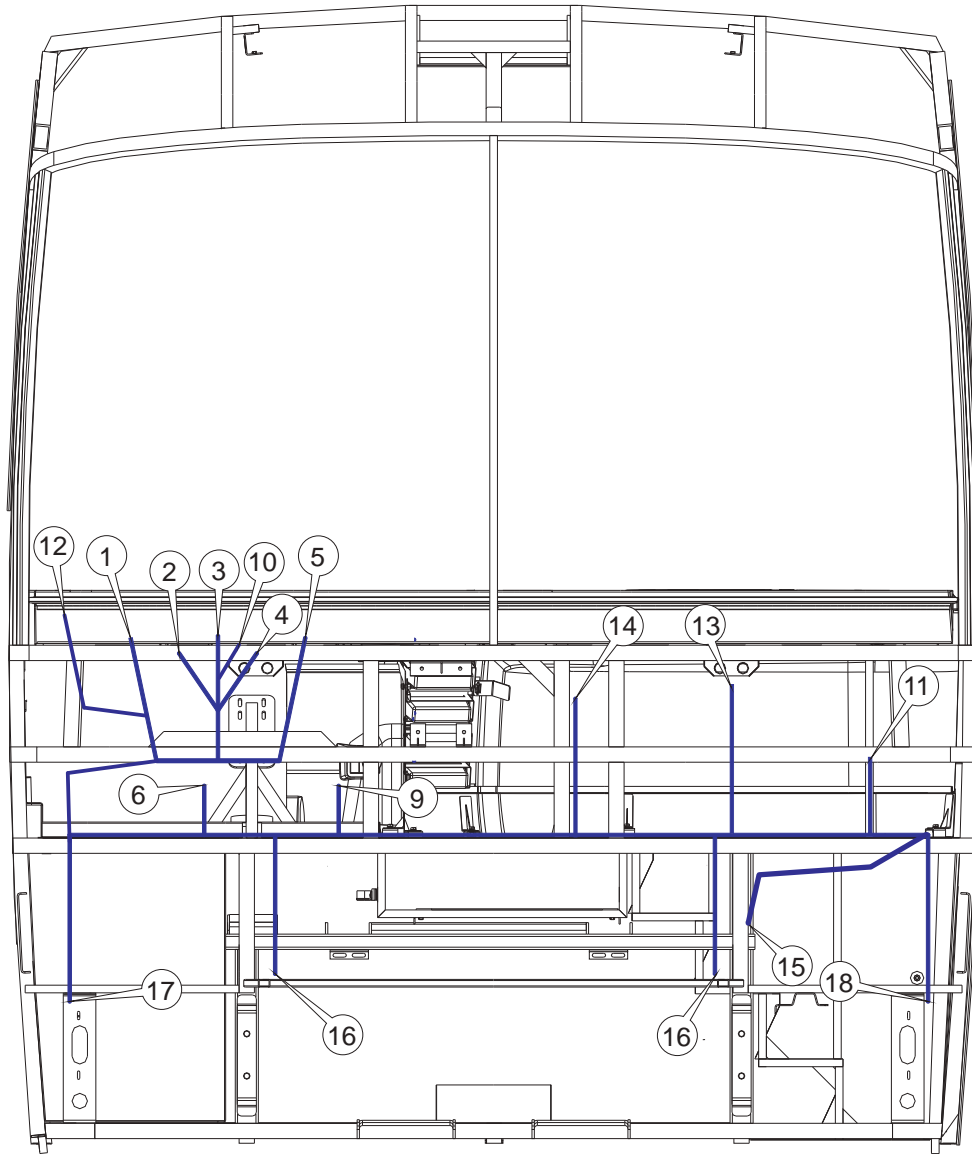
NO	IDENTIFICATION
1	Head Lamps (Low)
2	Head Lamps (High)
3	Signal Lamp
4	Spot Lamp
5	Fog Lamp (Option)
6	Horn
7	Outside Temperature Sensor
8	Stop Lamp Switch 1 (Brake Pedal)
9	Stop Lamp Switch 2 (Brake Pedal)
10	Air Sensör 1 (Brake Pedal)
11	Air Sensör 2 (Brake Pedal)

## A/C WIRING HARNESS



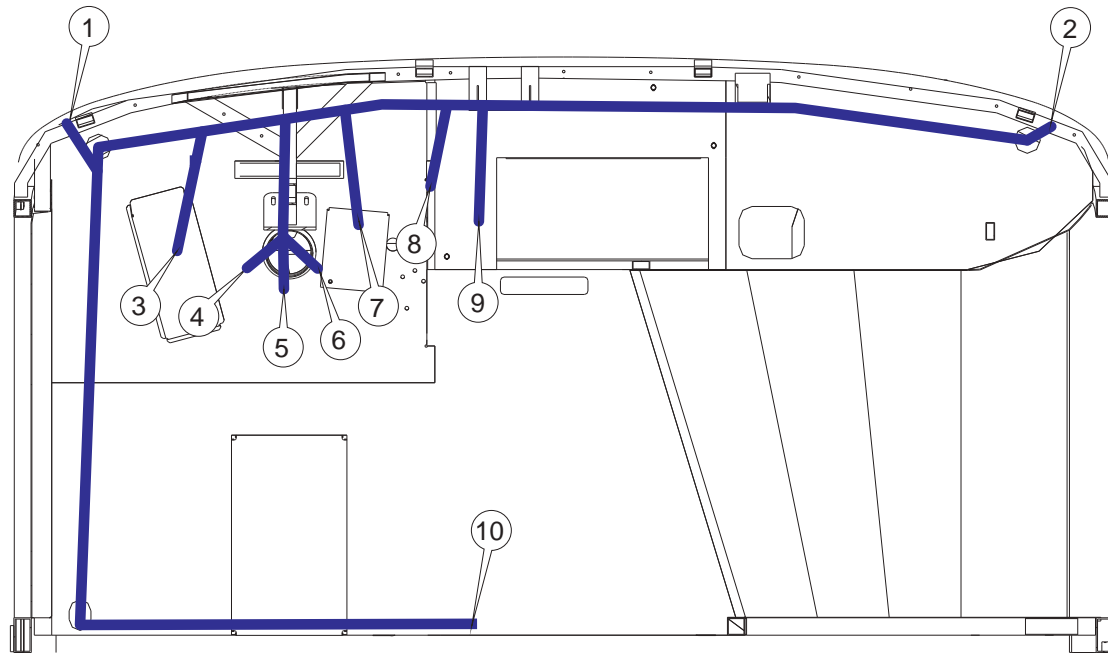
NO	IDENTIFICATION	NO	IDENTIFICATION
1	A/C Control Panel (Wabco)	7	Power Socket (Preheater)
2	A/C Control Unit	8	Fire Warning Sensor
3	A/C Compressor	9	Preheater Water Pump
4	Roof Water Valve	10	3 Way Valve (Water)
5	Floor Water Valve	11	Defroster Unit
6	Diagnose Socket (Preheater)	12	A/C 125A Power Fuse

## DASHBOARD WIRING HARNESS



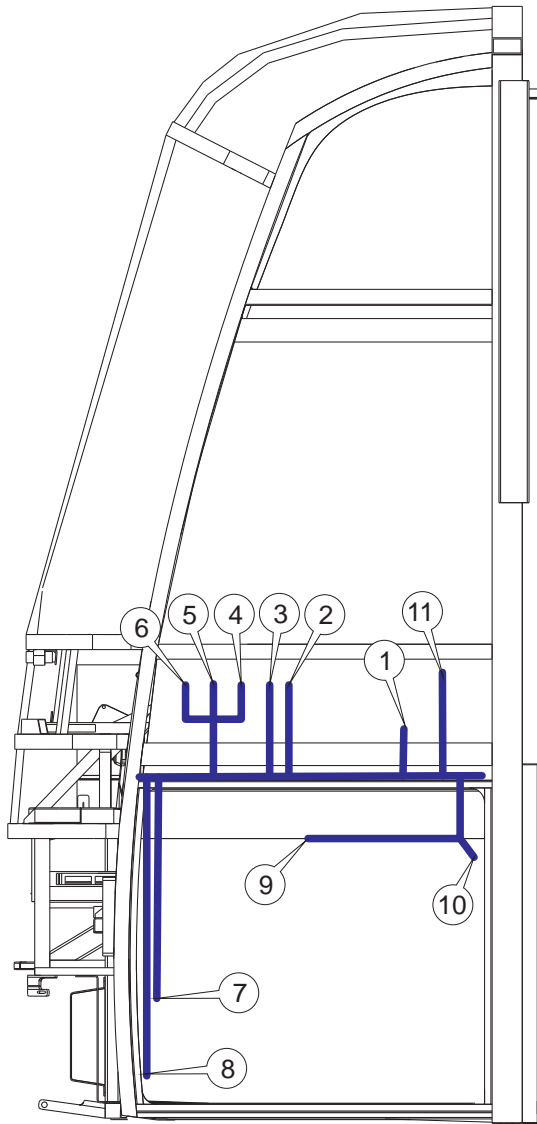
NO	IDENTIFICATION
1	Left Switch Group
2	Left Column Switch
3	Warning Lamps
4	Retarder Column Switch
5	Right Switch Group
6	Brake Pedal
7	A/C Contol Unit
8	Tachograph
9	Accelerator Pedal
10	Ignition Key
11	Cooler
12	Emergency Stop Switch
13	Wiper Motor
14	Defroster
15	Outside Temperature Sensor
16	Horns
17	Head Lamps Group (Left)
18	Head Lamps Group (Right)

## DASHBOARD WIRING HARNESS



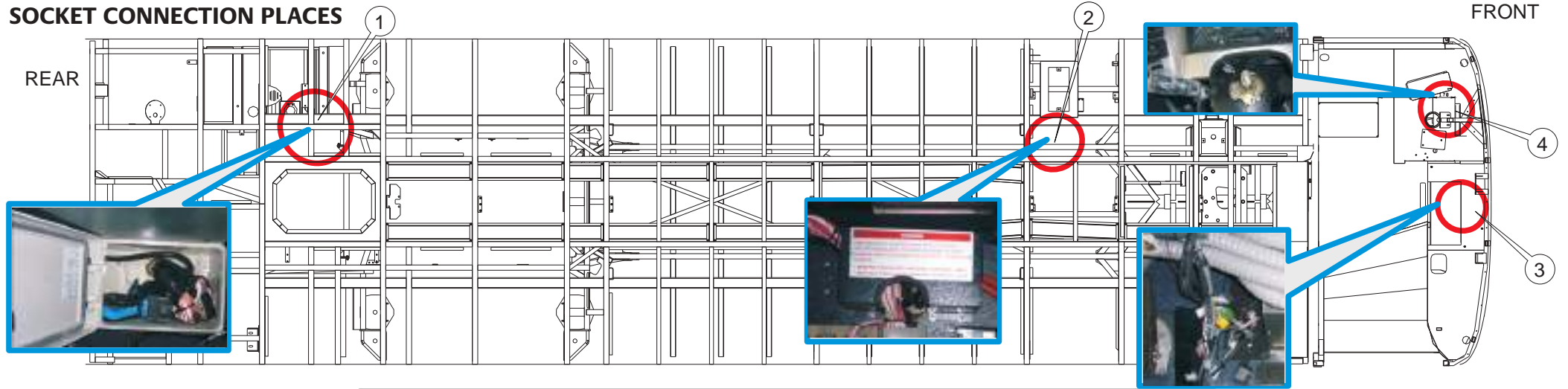
NO	IDENTIFICATION
1	Head Lamp Group (Left)
2	Head Lamp Group (Right)
3	Left Switch Group
4	Left Column Switch
5	Warning Lamps
6	Retarder Column Switch
7	Accelerator Pedal
8	Right Switch Group
9	A/C Control Unit
10	To Relay and Fuse Panel

## SWITCHBOX WIRING HARNESS

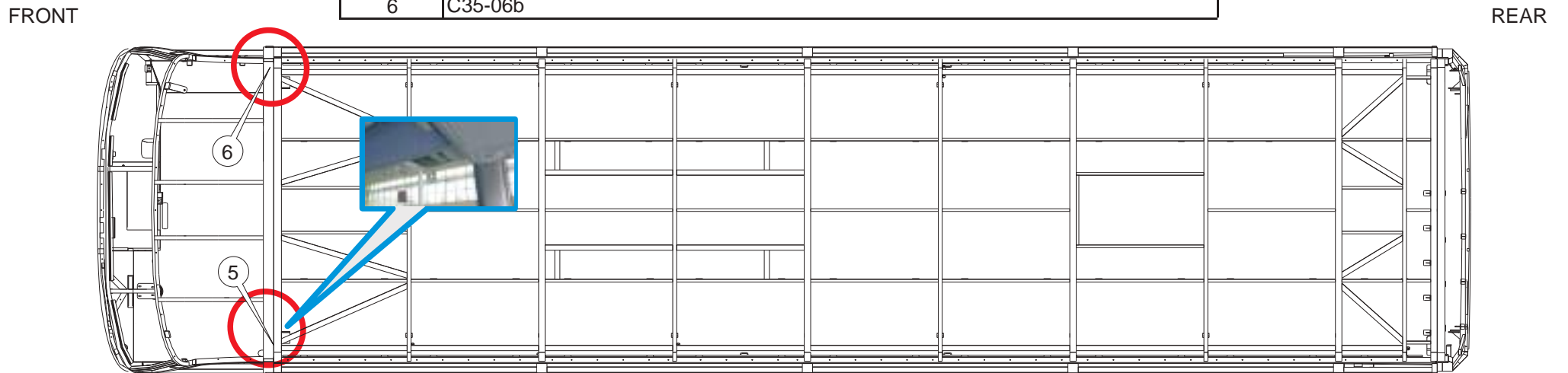


NO	IDENTIFICATION
1	Driver Speaker
2	Mirror Control
3	Parking Brake Switch
4	12V Plug
5	12V Plug (option)
6	Shift Selector (Transmission)
7	Wiper Water Motor
8	Marker Lamp
9	Luggage Lamp
10	Luggage Lamp Switch
11	K-line Socket

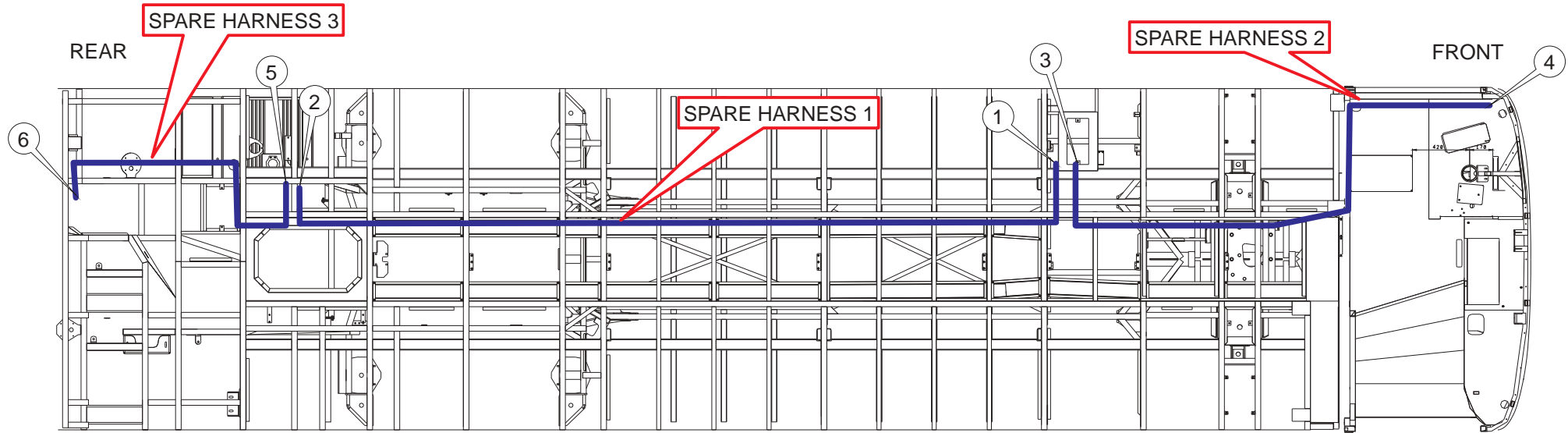
# SOCKET CONNECTION PLACES



NO	IDENTIFICATION
1	C46-01,C46-02, C46-03, C27-01, CHASIS, E.ROOM,
2	C13-01, C13-02, C13-03, C13-04, C11-01, C11-02, C11-03, C14-11, LIFT1,LIFT2 C11-01b, C14-11b, C14-11c
3	C17-01,C17-02, DEFROSTER, CX9-1, CX12,CX18,CX15
4	C33-01,C33-02,C33-03, FB-01
5	C35-06
6	C35-06b



## SPARE CABLE ( CHASSIS WIRING HARNESS )



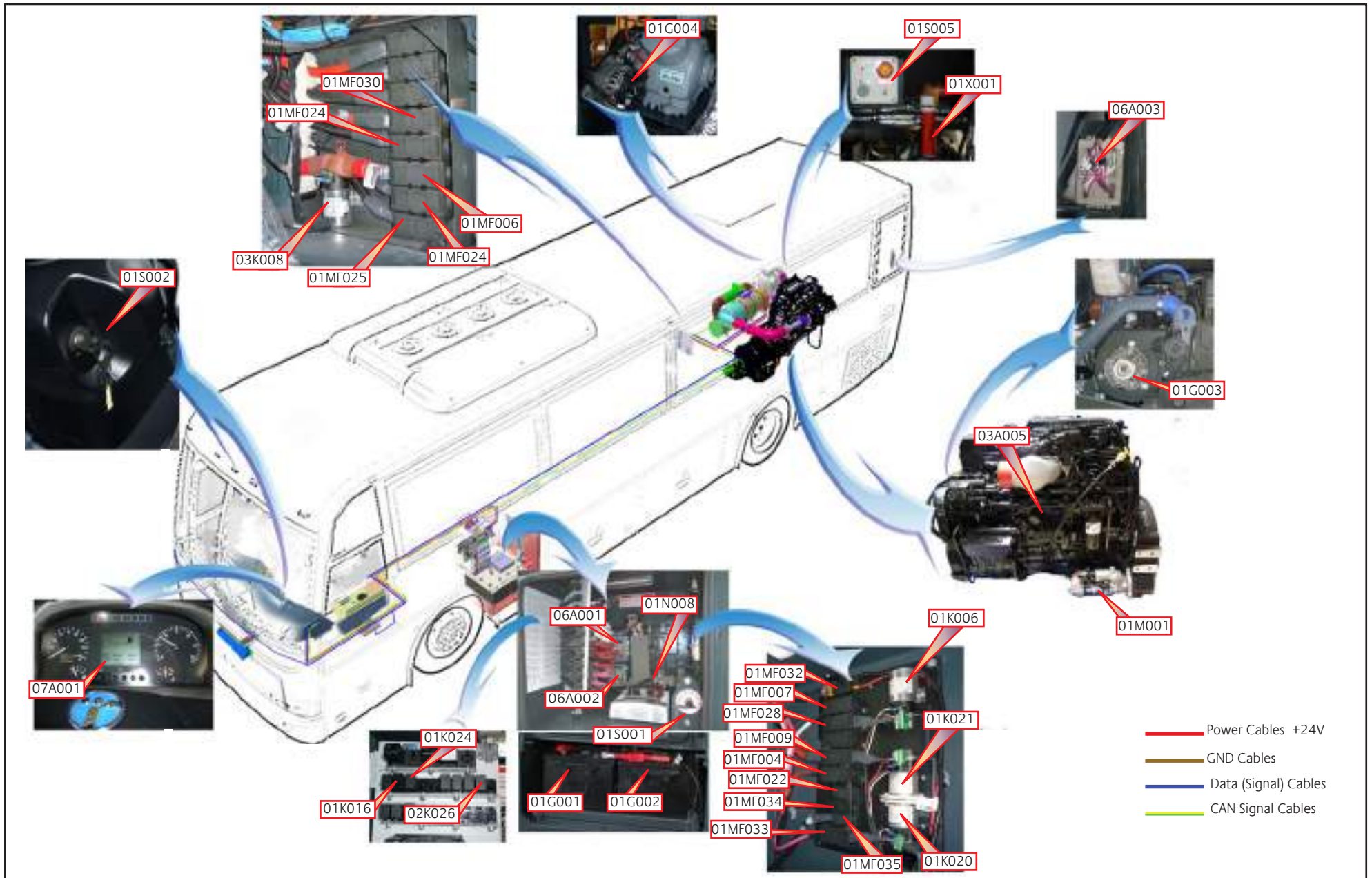
NO	IDENTIFICATION	SOCKET
1	SP-01, SP-02, SP-03, SP-04, SP-05, SP-06, SP-07, SP-08, SP-09, SP-10, SP-11, SP-12, SP-13, SP-14, SP-15, SP-16,	CHASIS
2	SP-01, SP-02, SP-03, SP-04, SP-05, SP-06, SP-07, SP-08, SP-09, SP-10, SP-11, SP-12, SP-13, SP-14, SP-15, SP-16,	CHASIS
3	SP-01, SP-02, SP-03, SP-04, SP-05, SP-06, SP-07, SP-08, SP-09, SP-10, SP-11, SP-12, SP-13, SP-14, SP-15, SP-16,	F.BODY
4	SP-01, SP-02, SP-03, SP-04, SP-05, SP-06, SP-07, SP-08, SP-09, SP-10, SP-11, SP-12, SP-13, SP-14, SP-15, SP-16,	F.BODY
5	SP-01, SP-02, SP-03, SP-04, SP-05, SP-06, SP-07, SP-08, SP-09, SP-10, SP-11, SP-12, SP-13, SP-14, SP-15, SP-16,	E.ROOM
6	SP-01, SP-02, SP-03, SP-04, SP-05, SP-06, SP-07, SP-08, SP-09, SP-10, SP-11, SP-12, SP-13, SP-14, SP-15, SP-16,	E.ROOM

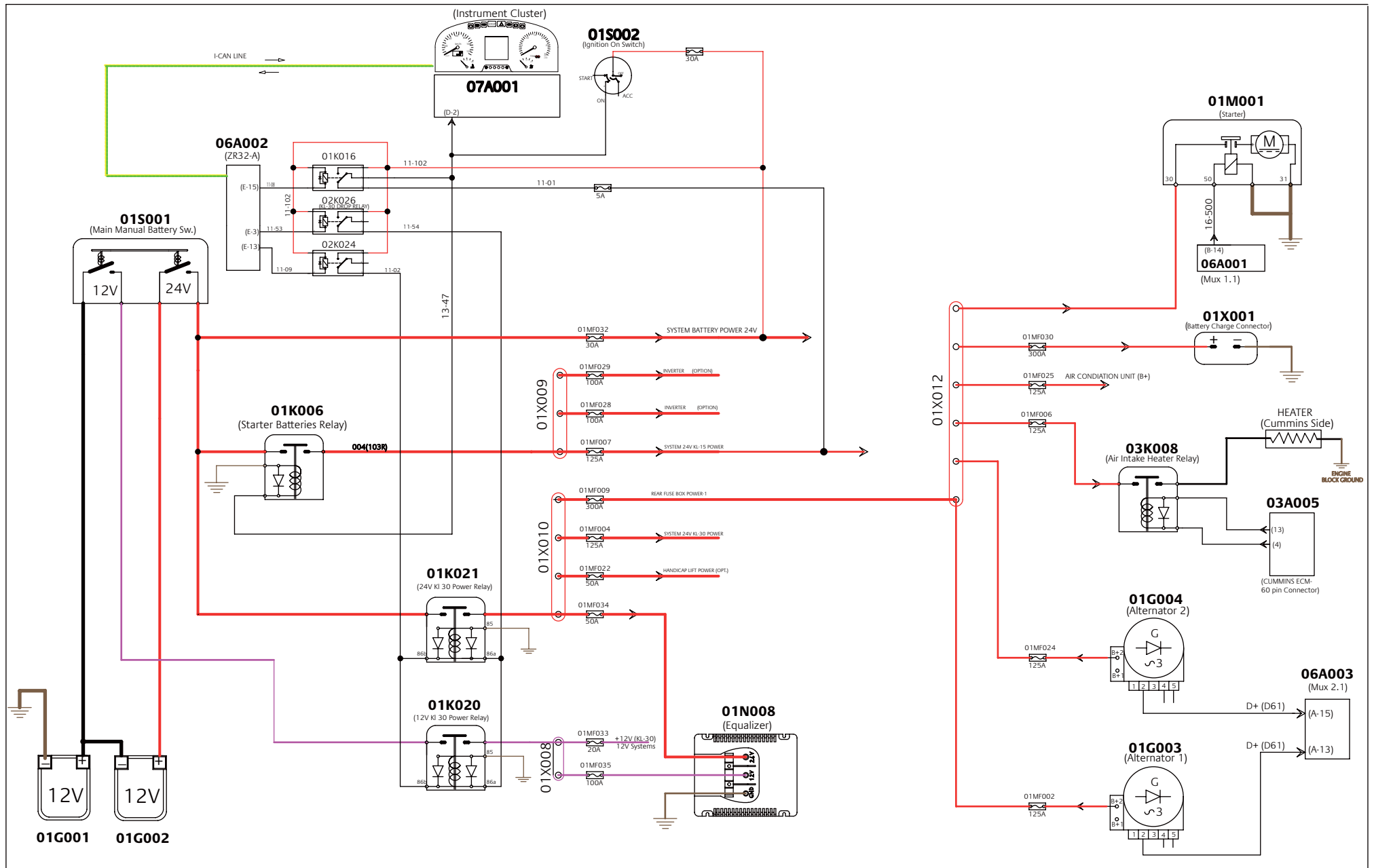


# 01

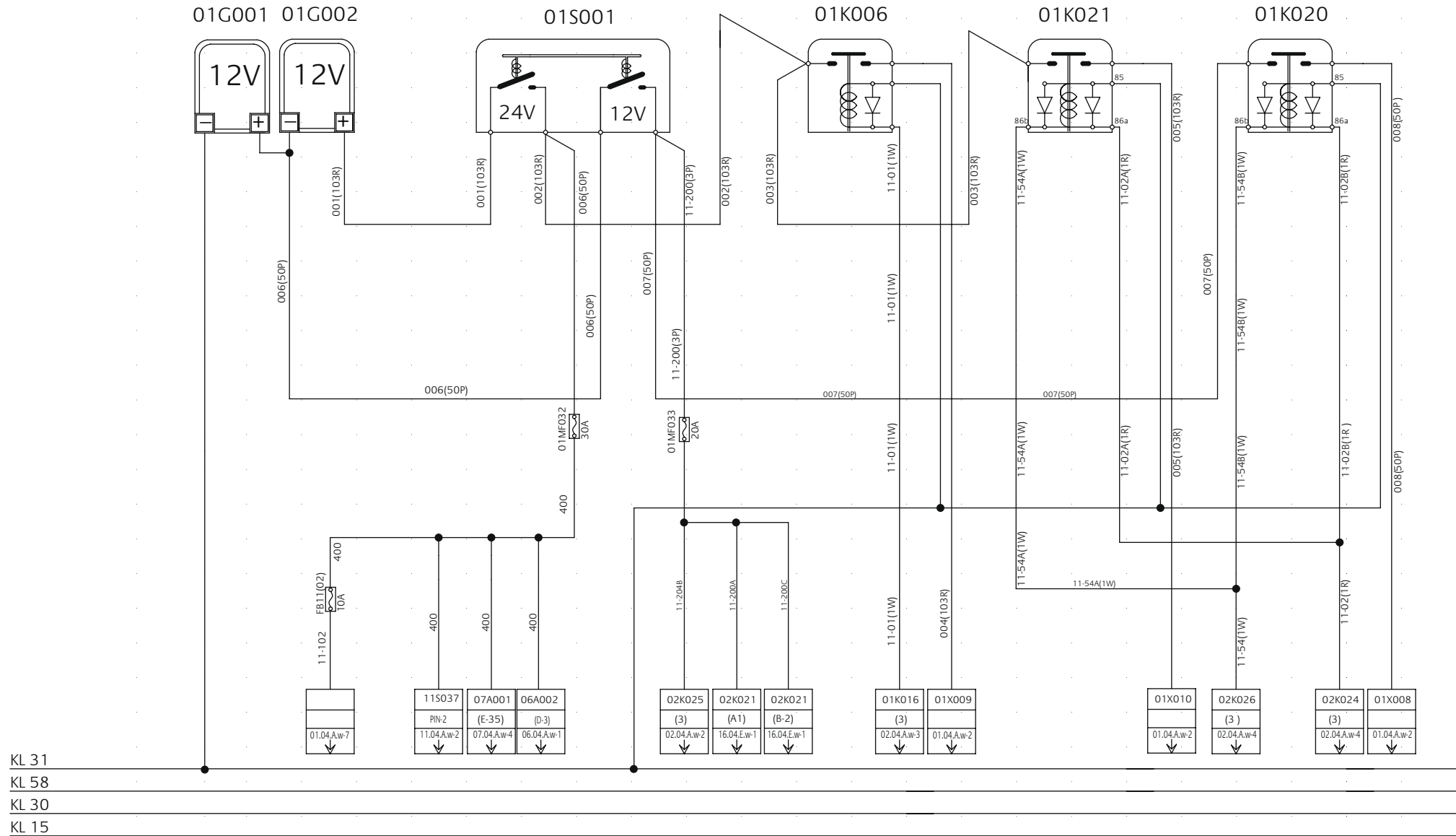
# POWER SYSTEM

Locations	
Power System .....	01.04.A.I-1
Electrical System Diagram	
Power System .....	01.04.A.gw-1
Wiring Diagram	
Power System .....	01.04.A.w-1



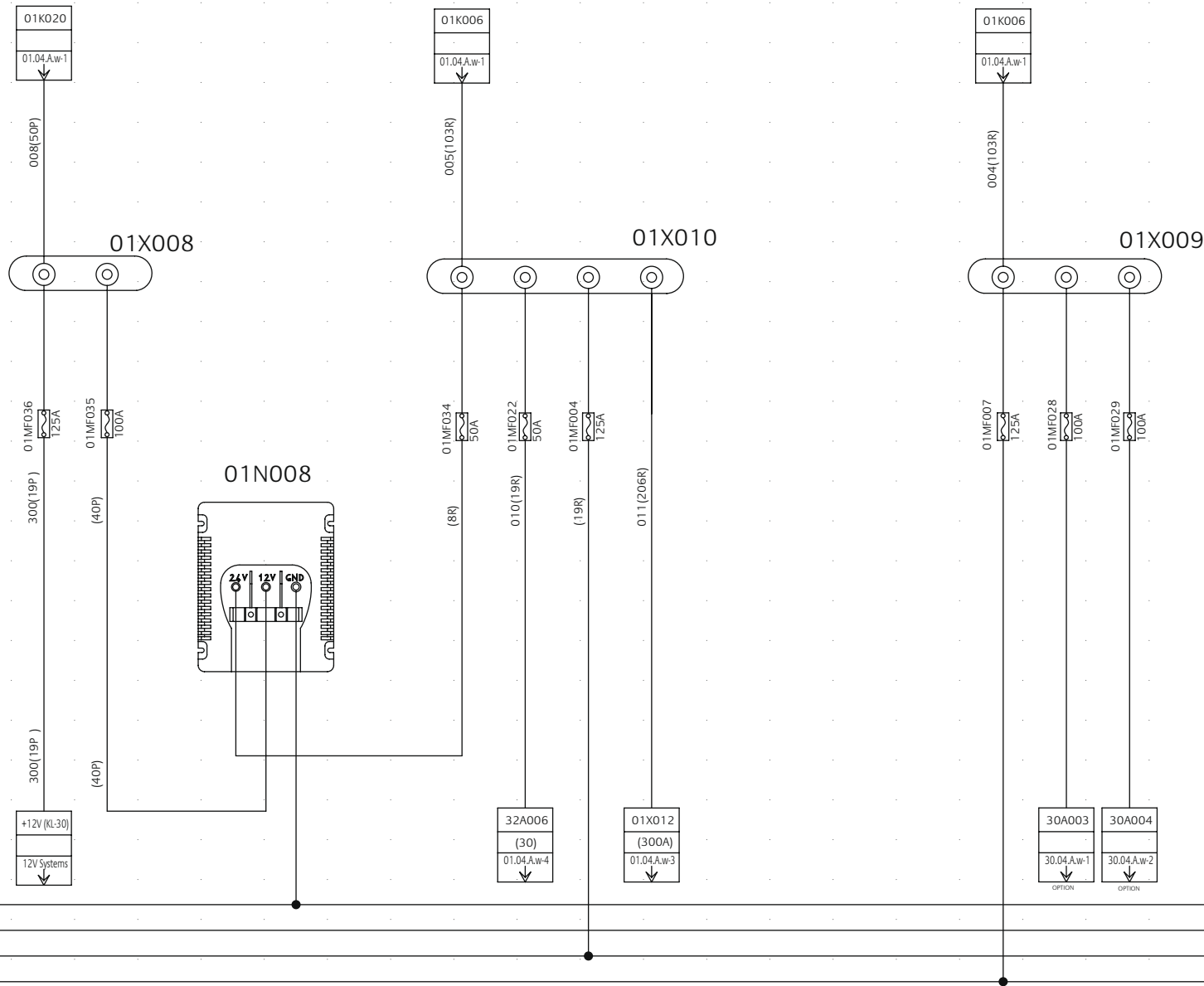






Code	Part No	Türkçe	English	Spanish	Français	Italiano
01K020	4	12V Kl 30 Besleme Rölesi	12V Kl 30 Supply Relay	Relé de alimentación de 12V Kl 30	12V Kl 30 Relais d'alimentation	Teleruttore alimentazione 12V Kl 30
01K006	10, 19	Start Aküleri Rölesi	Starter Batteries Relay	Relé de la Bateria del Motor de Arranque	Relais Batteries De Démarrage	Rele' Batterie Motorino Di Avviamento
01X008	4	2 Bağlantılı Mega Bakır Bara	2 Connected Mega Copper Busbar	2 Conductos de barras del Mega Copper conectados	2 bar connecte mega-cuivre	2 bar mega-rame collegato
01X010	10	4 Bağlantılı Mega Bakır Bara	4 Connected Mega Copper Busbar	4 Conductos de barras del Mega Copper conectados	4 bar connecte mega-cuivre	4 bar mega-rame collegato
01X009	19	3 Bağlantılı Mega Bakır Bara	3 Connected Mega Copper Busbar	3 Conductos de barras del Mega Copper conectados	3 bar connecte mega-cuivre	3 bar mega-rame collegato
01N008	7	24V/12V Gerilim /Akım Dengeleyici	24 V/12 V Equalizer	00000	00000	00000
01MF036	4	12V KL-15 Besleme	12V KL-15 Power	00000	00000	00000
01MF035	5	Gerilim Dengeleyici 12V Beslemesi	Voltage Stabilizer 12V Supply	Estabilizador de voltaje de alimentación de 12V	Stabilisateur de tension Alimentation 12V	Stabilizzatore di Tensione, Alimentazione 12V
01MF034	11	Gerilim Dengeleyici 24V Beslemesi	Voltage Stabilizer 24V Supply	Estabilizador de voltaje de alimentación de 24V	Stabilisateur de tension Alimentation 24V	Stabilizzatore di Tensione, Alimentazione 24V
01MF022	12	Lift Ünitesi Beslemesi	Lift Unit Power	Alimentación del Elevador	Puissance Du Mecanisme De Levage	Alimentazione Unita' Sollevamento
32A006	12	Engelliler Asansörü Tahrik Ünitesi	Handicapped Lift Drive Unit	Unidad de Tracción de Elevador para Minusválidos	Unité De Commande Ascenseur Pour Handicapés	Unita' Di Trazione Per Ascensore Per Disabili
01MF004	13	Röle Paneli Kl30 Beslemesi	Relay Panel Kl30 Power	Alimentación del Panel de Relés Kl30	Alimentation Du Panneau Des Relais Kl30	Alimentazione Pannello Rele' Kl30
01X012	14	6 Bağlantılı Mega Bakır Bara	6-Link Mega Copper Busbar	Barra conductora de cobre mega de 6 enlaces	Bus en mega cuivre 6 liens	Mega Busbar di Rame a 6 connessioni
01MF007	19	Röle Paneli Kl15 Beslemesi	Relay Panel Kl15 Power	Alimentación del Panel de Relés Kl15	Alimentation Du Panneau Des Relais Kl15	Alimentazione Pannello Rele' Kl15
01MF028	20	24V/220V Inverter Beslemesi 1	24V/220V Inverter Power 1	Convertidor de Corriente 1 de 24V/220V	24V/220V Transformateur Puissance 1	24V/220V Power Inverter 1
01MF029	21	24V/220V Inverter Beslemesi 2	24V/220V Inverter Power 2	Convertidor de Corriente 2 de 24V/220V	24V/220V Transformateur Puissance 2	24V/220V Power Inverter 2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

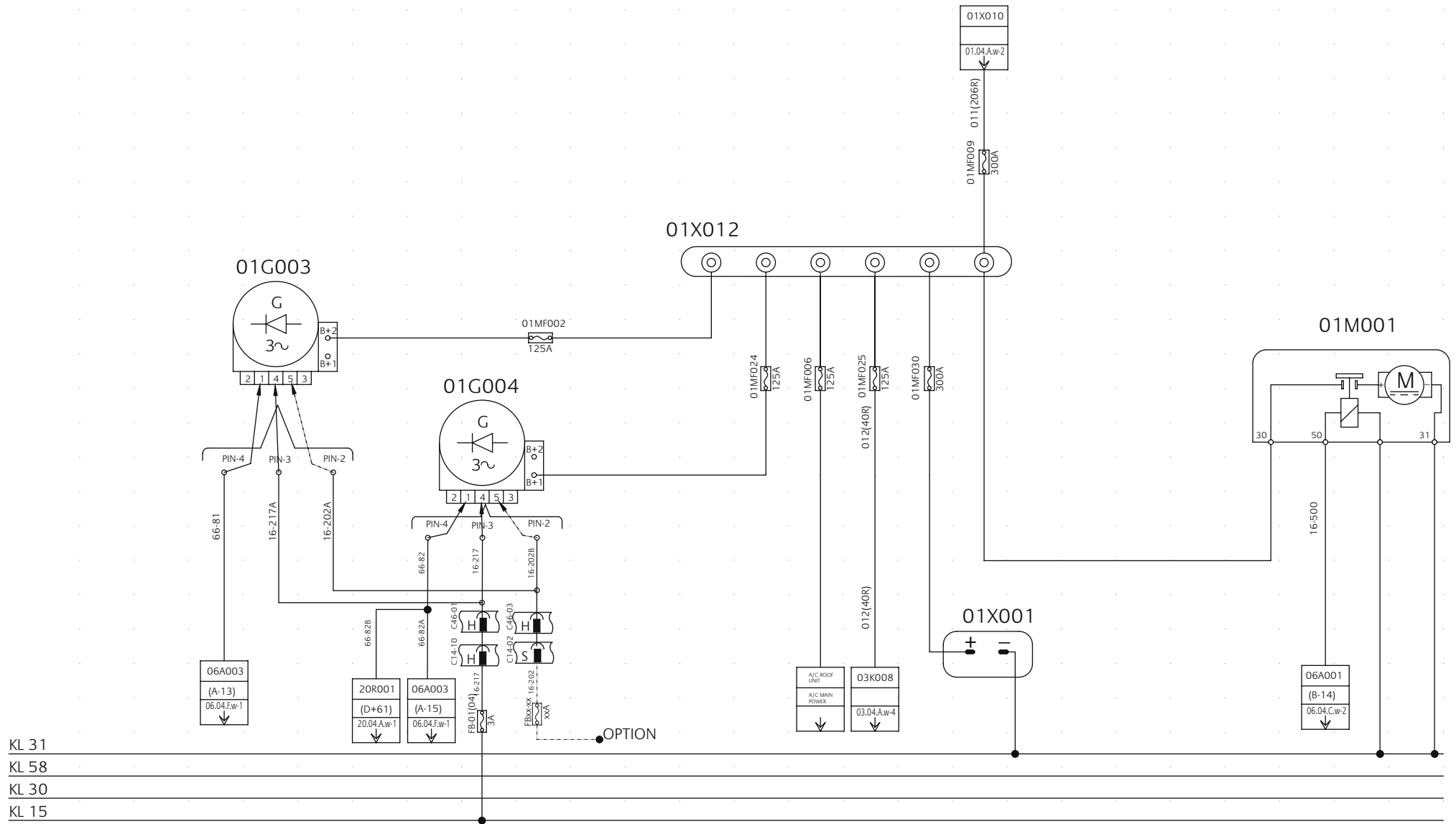


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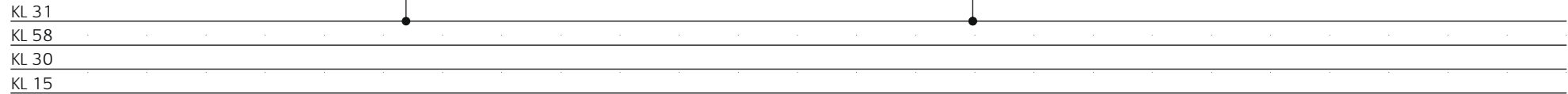
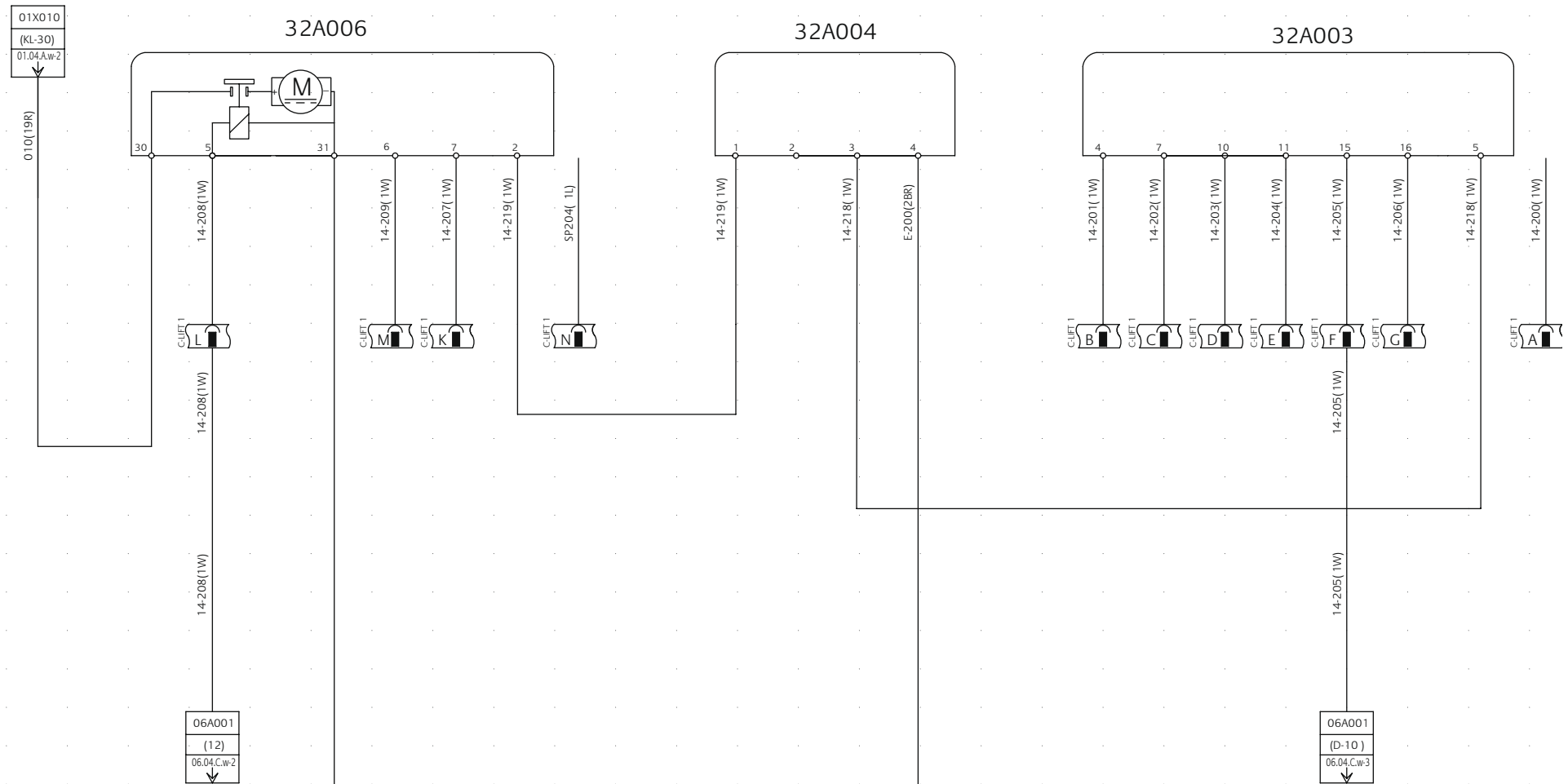
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
01X010	4	4 Bağlantılı Mega Bakır Bara	4 Connected Mega Copper Busbar	4 Conductos de barras del Mega Copper conectados	4 bar connecte mega-cuivre	4 bar mega-rame collegato
32A006	3,7	Engelliler Asansörü Tahrik Ünitesi	Handicapped Lift Drive Unit	Unidad de Tracción de Elevador para Minusválidos	Unité De Commande Ascenseur Pour Handicapés	Unita' Di Trazione Per Ascensore Per Disabili
32A004	6	Engelliler Asansörü Kumanda Ünitesi	Handicapped Lift Control Unit	Unidad de Control del Elevador para Minusválidos	Unité De Commande Ascenseur Pour Handicapés	Unita' Di Controllo Per Ascensore Per Disabili
32A003	8	Engelliler Asansörü Kullanım Ünitesi	Handicapped Lift Operating Unit	Unidad Operativa del Elevador para Minusválidos	Unité De Commande Ascenseur Pour Handicapés	Unita' Di Attivazione Per Ascensore Per Disabili
06A001	9	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
06A001	13	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1

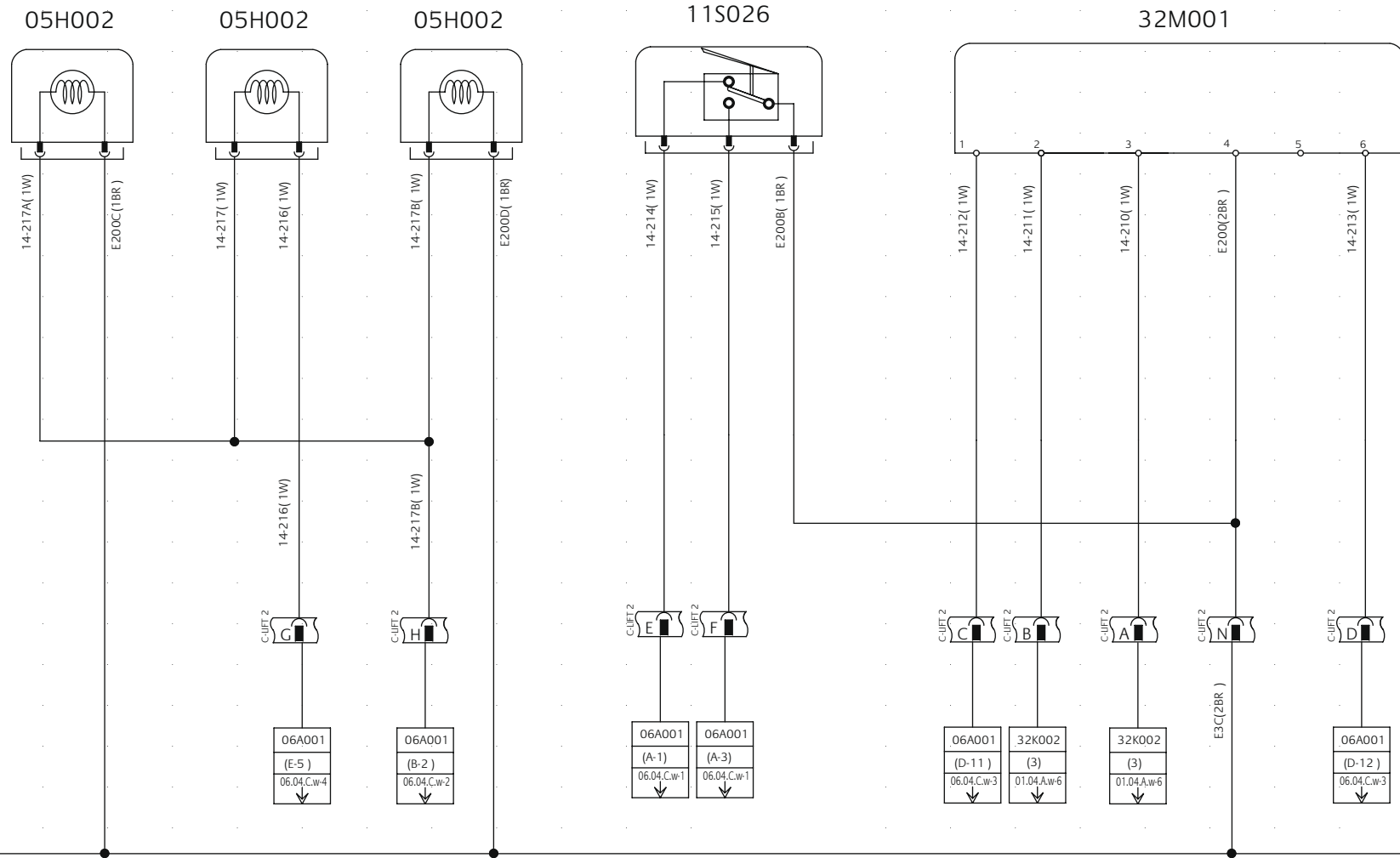
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
05H002	6	Allison Şanzıman Uyarı Lambası	Allison Transmission Warning Lamp	Luz de Advertencia de la Transmisión Allison	Voyant d'avertissement de la transmission Allison	Spia trasmissione Allison
11S026	13	Ön Kapi Açık/Kapalı Pozisyon Mikro Şalteri 2	Front Door Open/Close Position Micro Switch 2	Micro Switch de Posición de Puerta Delantera Abierta/Cerrada 2	Micro-Interrupteur Ouverture / Fermeture Portiere Avant 2	Microinterruttore Di Posizione Porta Anteriore Aperta/Chiusa 2
32M001	20	Engelli Asansörü Güvenlik Kapi Kilitleme Motoru	Handicap Lift Safety Door Locking Motor	Motor de Bloqueo de Seguridad del Elevador para Minusválidos	Moteur De Verrouillage De La Portiere De Securite De L'Ascenseur Pour Personne Handicapee	Motore Blocco Porta Di Sicurezza Sollevamento Disabili
06A001		Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
32K002	18, 20	Engelliler Asansörü Kapisi Açık Bilgisi Rölesi	Handicapped Lift Door Relay (Door Open)	Relé de la Puerta del Elevador para Minusválidos (Puerta Abierta)	Relais Porte D'Ascenseur Pour Personne Handicapée (Portiere Ouverte)	Relé' Portello Ascensore Per Disabili (Portello Aperto)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

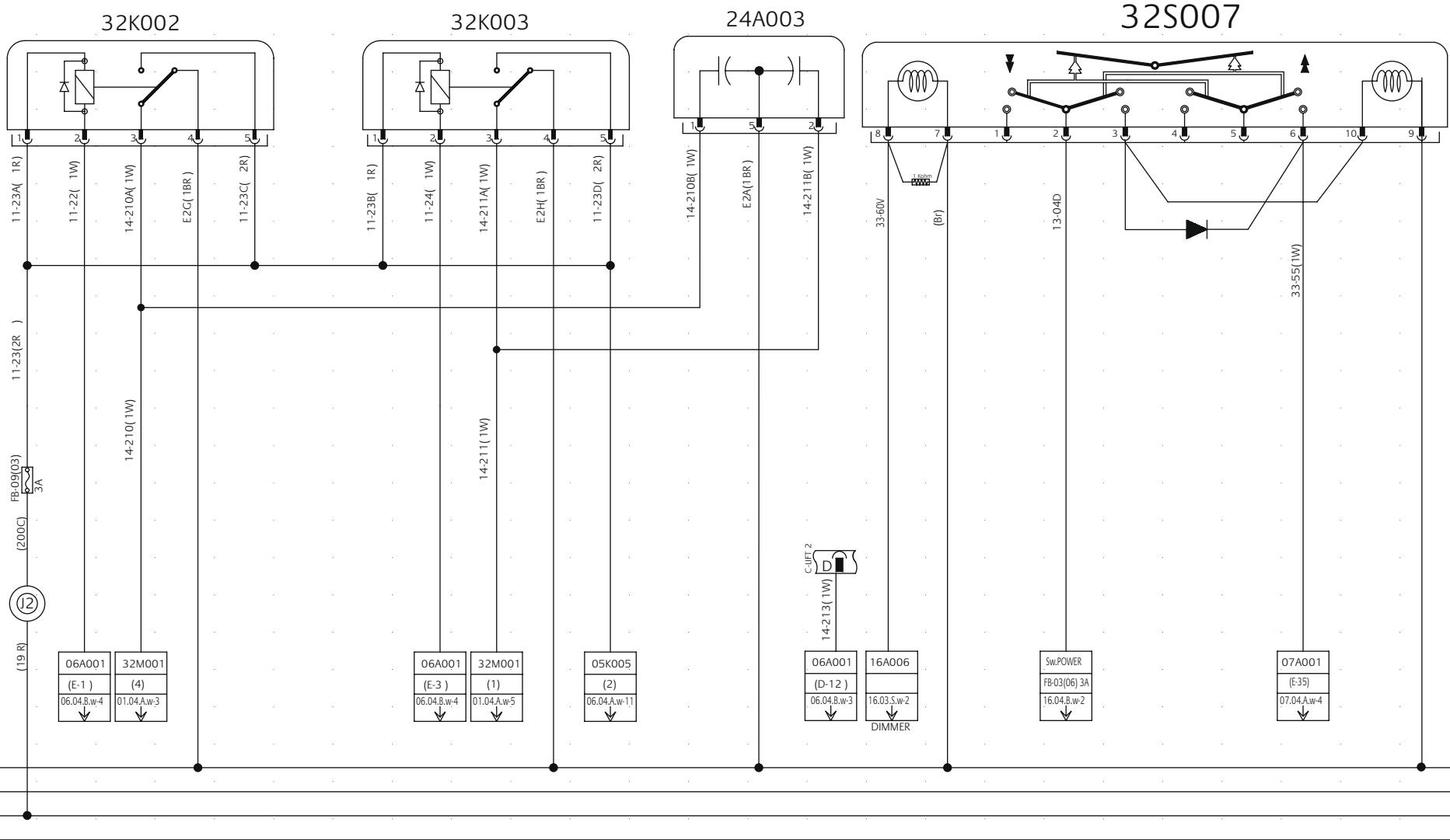


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Code	Part No	Türkçe	English	Spanish	Français	Italiano
32K002	3	Engelliler Asansörü Kapisi Açık Bilgisi Rölesi	Handicapped Lift Door Relay (Door Open)	Relé de la Puerta del Elevador para Minusválidos (Puerta Abierta)	Relais Porte D'Ascenseur Pour Personne Handicapée (Portiere Ouverte)	Rele' Portello Ascensore Per Disabili (Portello Aperto)
32K003	9	Engelliler Asansörü Kapisi Kapalı Bilgisi Rölesi	Handicapped Lift Door Relay (Door Close)	Relé de la Puerta del Elevador para Minusválidos (Puerta Cerrada)	Relais Porte D'Ascenseur Pour Personne Handicapée (Portiere Fermée)	Rele' Portello Ascensore Per Disabili (Portello Chiuso)
24A003	17	Kapasitans Modülü	Capacitance Module	Módulo de Capacitancia	Capacité du module	Capacità Modulo
06A001	2, 8	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
32M001	3, 9	Engelli Asansörü Güvenlik Kapi Kilitleme Motoru	Handicap Lift Safety Door Locking Motor	Motor de Bloqueo de Seguridad del Elevador para Minusválidos	Moteur De Verrouillage De La Portiere De Securite De L'Ascenseur Pour Personne Handicapée	Motore Blocco Porta Di Sicurezza Sollevamento Disabili
05K005	12	Hiz Sinyali Rölesi, Otomatik Şanziman	Speed Relay Automatic Gearbox	Caja de Cambios Automática de Relé de Velocidad	Relais Tachymétrique De La Boîte De Vitesses	Trasmissione Automatica Rele' Velocita'

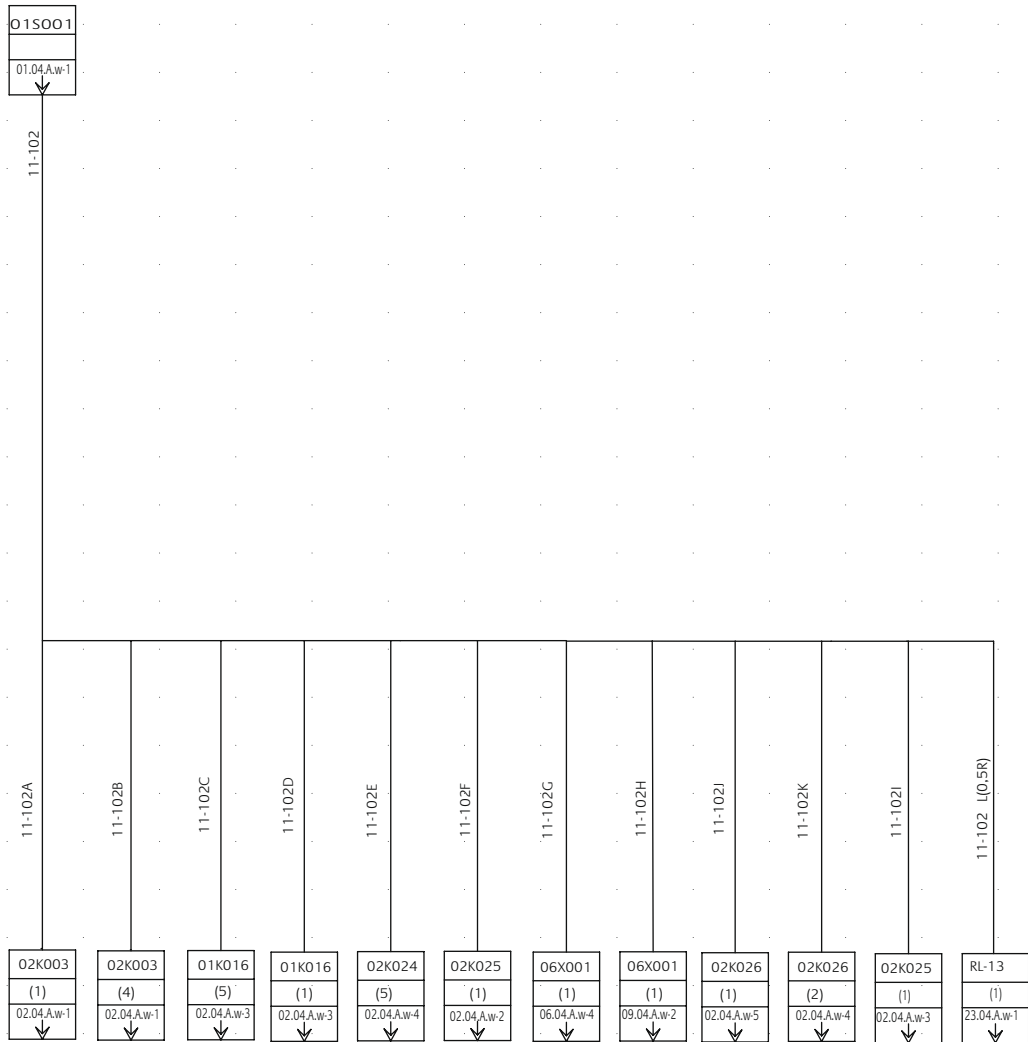
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
01S001	2	El Kumandali, Ana, Akü Şalteri	Main Manual Battery Switch	Interruptor Manual Principal de la Bateria	Interrupteur Principal À Main Batteries	Interruttore Manuale Principale Batteria
02K003	2,3	Acil Durum KI15 Kesme Rölesi	Emergency Stop KI15 Cut-Off Relay	Relés de Corte KI15 de Parada de Emergencia	Relais De Coupure KI15 D'Arret D'Urgence	Rele' Di Arresto Per Arresto Di Emergenza KI15
01K016	4,5	12V KI 15 Besleme Rölesi	12V KI15 Relay	Relé KI15 de 12V	Relais 12V KI15	Rele' KI15 12V
02K024	7	KL-30 Reaktif Etme Rölesi	KL-30 DROP RELAY	00000	00000	00000
02K025	8,13	Acildurum Stop Rölesi (12V Sistem İçin)	Emergency Stop Relay (With 12V System)	00000	00000	00000
06X001	9,10	J1939/J1587 Can Ariza Teşhis Prizi	Can J1939/J1587 Diagnostic Socket	Toma de Conexión para Herramientas de Diagnóstico del Cuadro de Mandos J1939/J1587	Prise Diagnostic Can J1939/J1587	Presa Diagnostica Can J1939/J1587
02K026	11,12	KL-30 Aktif Etme Rölesi	KL-30 PULL RELAY	00000	00000	00000





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 KL 58  
 KL 30  
 KL 15



# 02

# EMERGENCY STOP & FLASHER & STARTER SAFETY SYSTEMS

## Locations

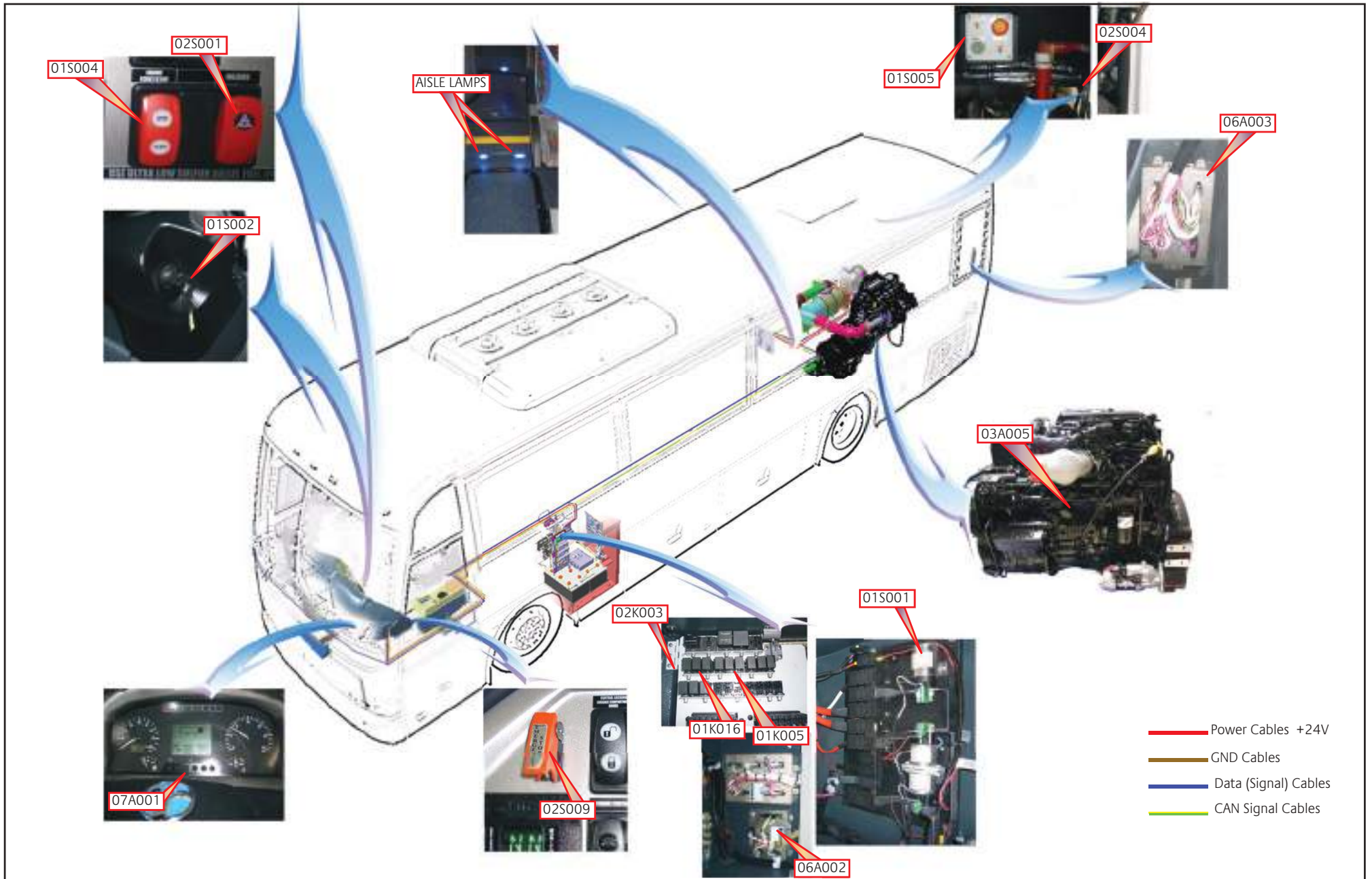
Emergency Stop System ..... 02.04.A.I-1

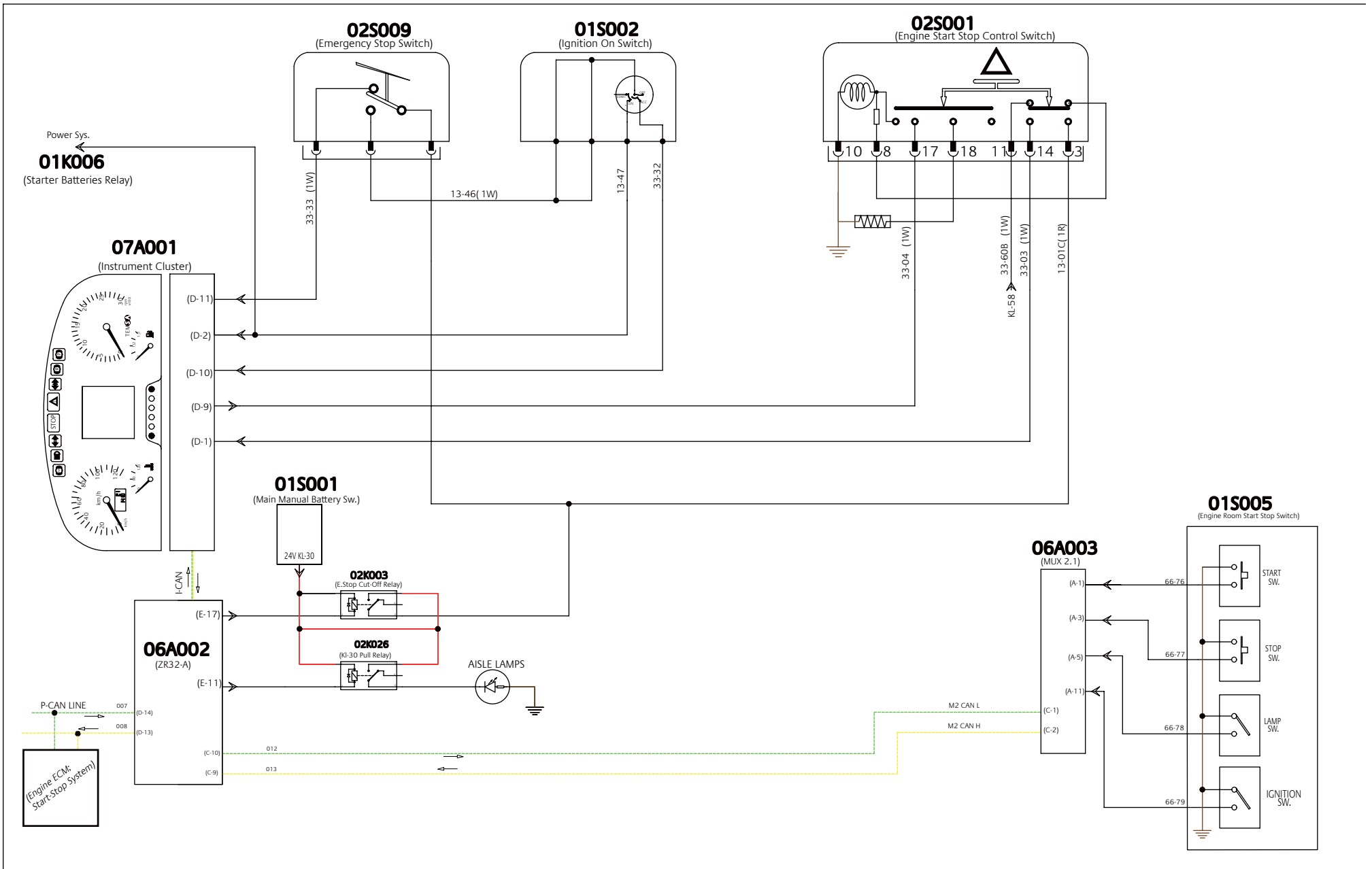
## Electrical System Diagram

Emergency Stop System .....02.04.A.gw-1

## Wiring Diagram

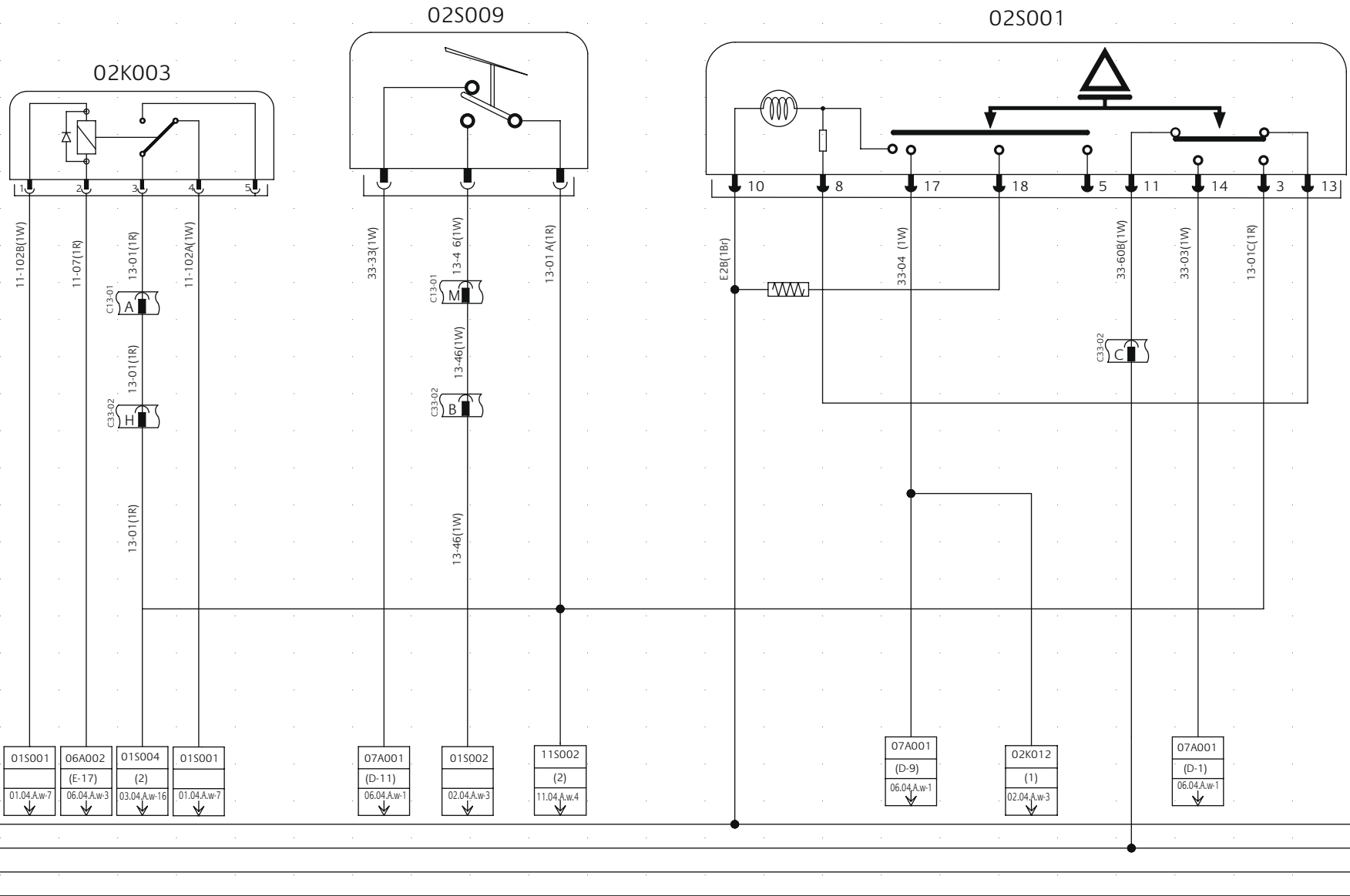
Emergency Stop System ..... 02.04.A.w-1





Code	Part No	Türkçe	English	Spanish	Français	Italiano
02K003	5	Acil Durum KI15 Kesme Rolesi	Emergency Stop KI15 Cut-Off Relay	Relés de Corte KI15 de Parada de Emergencia	Relais De Coupure KI15 D'Arret D'Urgence	Rele' Di Arresto Per Arresto Di Emergenza KI15
01S001	3	El Kumandali, Ana, Akü Şalteri	Main Manual Battery Switch	Interruptor Manual Principal de la Batería	Interrupteur Principal À Main Batteries	Interruttore Manuale Principale Batteria
06A002	4	Zr 32-A	Zr 32-A	Zr 32-A	Zr 32-A	Zr 32-A
01S004	5	Motor Açma Kapama Şalteri	Engine Start Stop Control Switch	Interruptor de Control de Arranque/Parada del Motor	Contacteur De Commande Demarrage Arrêt Du Moteur	Interruttore Di Controllo Arresto Avvio Del Motore
01S001	6	El Kumandali, Ana, Akü Şalteri	Main Manual Battery Switch	Interruptor Manual Principal de la Batería	Interrupteur Principal À Main Batteries	Interruttore Manuale Principale Batteria
02S009	10	Acil Durum Şalteri	Emergency Stop Switch	Interruptor de Parada de Emergencia	Interrupteur Arret D'Urgence	Interruttore Arresto Di Emergenza
07A001	9,18,23	Kombi Gösterge		Grupo de Instrumentos	Combiné D'Instruments	Gruppo Strumentazione
01S002	10	Kontak Açık Şalteri	Ignition On Switch	Interruptor de Encendido del Contacto	Contacteur Contact Mis	Interruttore Accensione
02S001	20	Flaşör Şalteri	Hazard Warning Signal Switch	Interruptor de Señalización de Peligro	Contacteur Feux De Détresse	Interruttore Segnale Avvertimento Pericolo

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25



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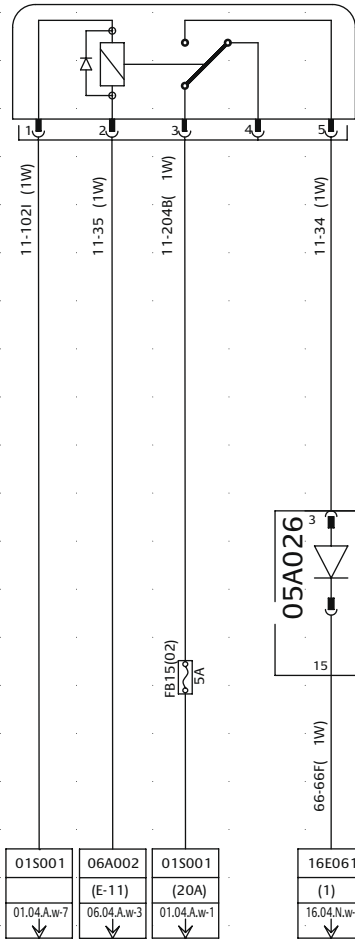
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
02S007	3	Acil Durum Şalteri	Emergency Stop Switch	Interruptor de Parada de Emergencia	Notstopschalter	Interrupteur Arret D'Urgence
16S029	10	Flaşör Şalteri	Hazard Warning Signal Switch	Interruptor de Señalización de Peligro	Schalter Warnblinkanlage	Contacteur Du Voyant Avertisseur De Danger
02S010	23	Motor Bölmesi Marş Kilidi Şalteri (Otomatik Şanziman)	Engine Compartment Start Lock-out Switch (Automatic Transmission)	Interruptor de Bloqueo de Transmisión del Compartimento del Motor (Transmisión Automática)	Blockierschalter Motorraum Start (Automatikgetriebe)	Interrupteur De Securite Du Systeme De Demarrage Du Bloc Moteur (Transmission Automatique)
05A026	1	Diyot Ve Direnç Grubu	Diode & Resistor Group	Grupo de Diodos y Resistencias	Dioden- & Widerstandsgruppe	Bloc De Diodes Et De Resistances
06A002	1	Zr32	Zr32	Zr32	Zr32	Zr32
06A005	2	Mux 1.3	Mux 1.3	Multiplexor 1,3	Mux 1,3	Mux 1,3
01S002	4	Kontak Açık Şalteri	Ignition On Switch	Interruptor de Encendido del Contacto	Schalter Zuendung Ein	Contacteur Contact Mis
06A005	8	Mux 1.3	Mux 1.3	Multiplexor 1,3	Mux 1,3	Mux 1,3
05A026	12	Diyot Ve Direnç Grubu	Diode & Resistor Group	Grupo de Diodos y Resistencias	Dioden- & Widerstandsgruppe	Bloc De Diodes Et De Resistances
06A002	12	Zr32	Zr32	Zr32	Zr32	Zr32
07A002	15	Gösterge Paneli	Can Cockpit	Cabina de Controles	Can Cockpit	Cockpit Can
06A005	20	Mux 1.3	Mux 1.3	Multiplexor 1,3	Mux 1,3	Mux 1,3
06A003	23	Mux 2.1	Mux 2.1	Multiplexor 2,1	Mux 2,1	Mux 2,1

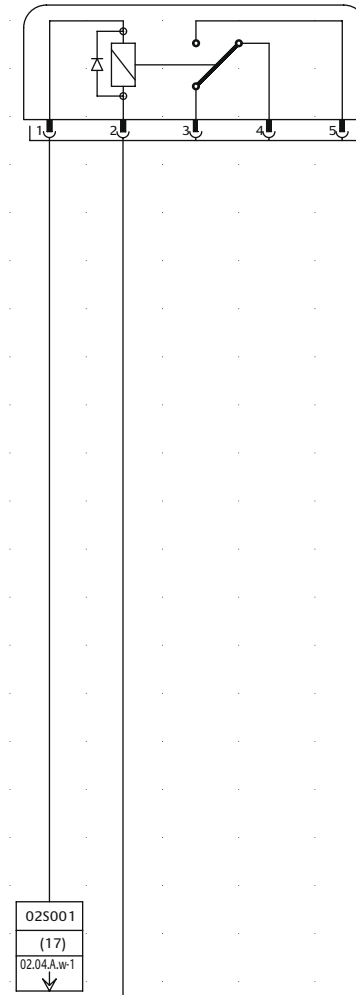


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02K025



DASHBOARD SES ROLESİ  
02K012

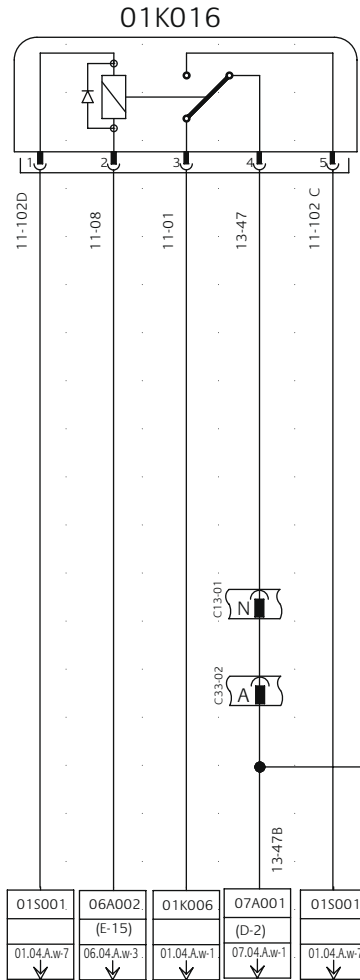


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KL 15

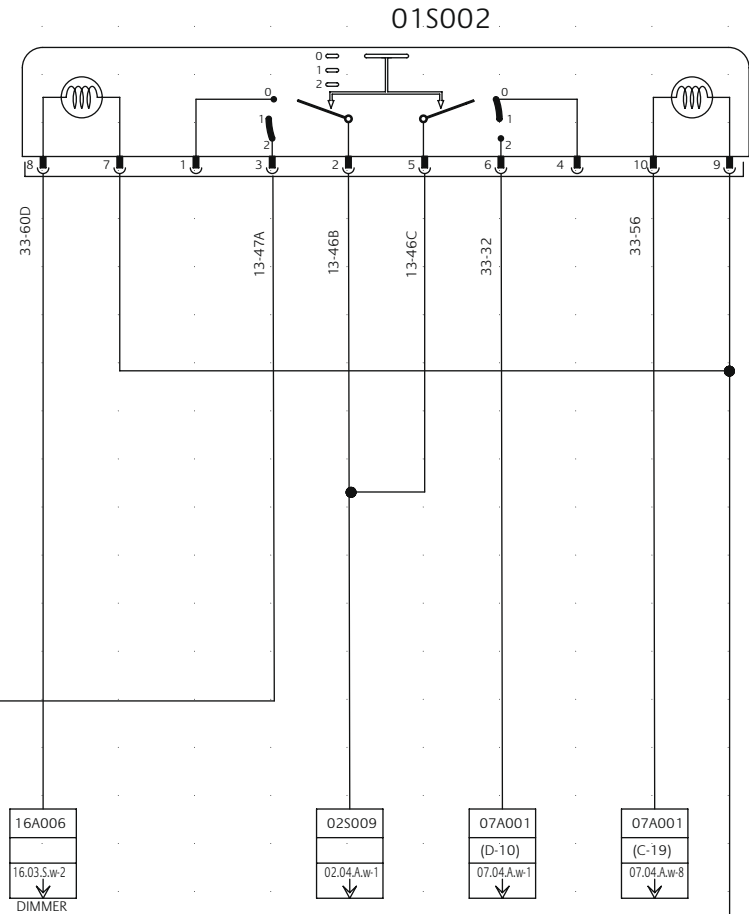
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01S001	06A002 (E-15)	01K006	07A001 (D-2)	01S001
01.04.A.w-7	06.04.A.w-3	01.04.A.w-1	07.04.A.w-1	01.04.A.w-7



16A006	02S009	07A001 (D-10)	07A001 (C-19)
16.03.S.w-2 DIMMER	02.04.A.w-1	07.04.A.w-1	07.04.A.w-8

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KL 58  
KL 30  
KL 15

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

TEMSA

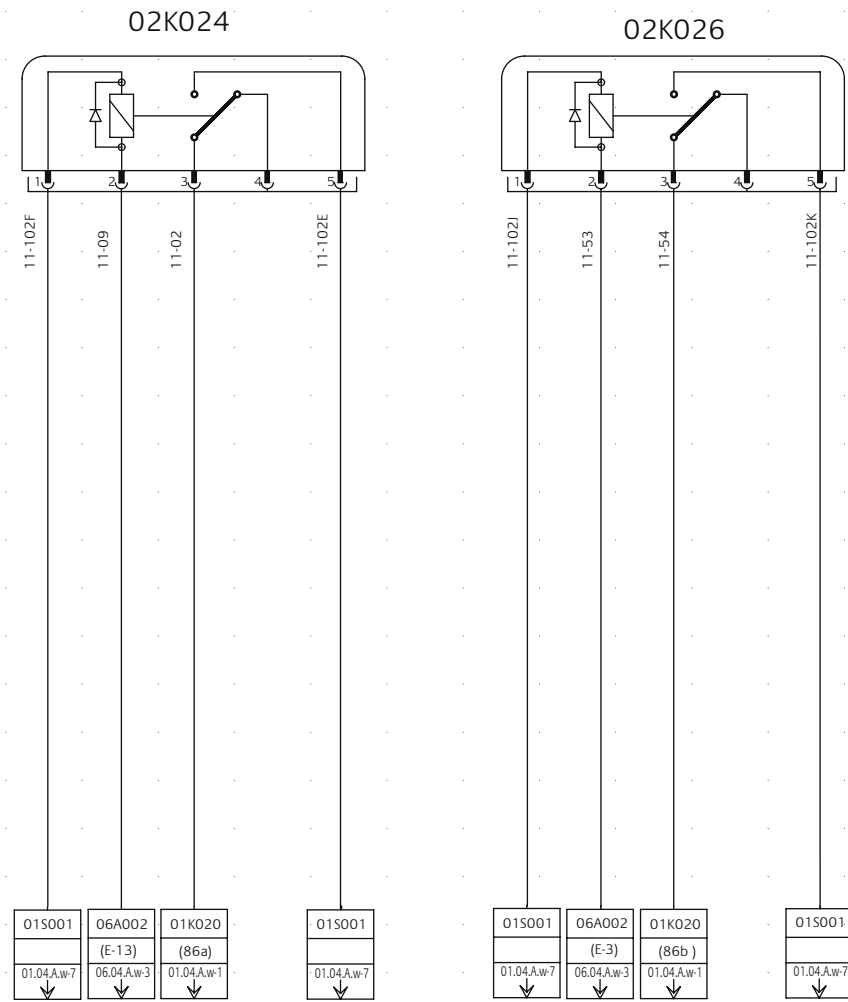
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KL 58																								
KL 30																								
KL 15																								

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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# 03

# ENGINE CONTROL SYSTEM

## Locations

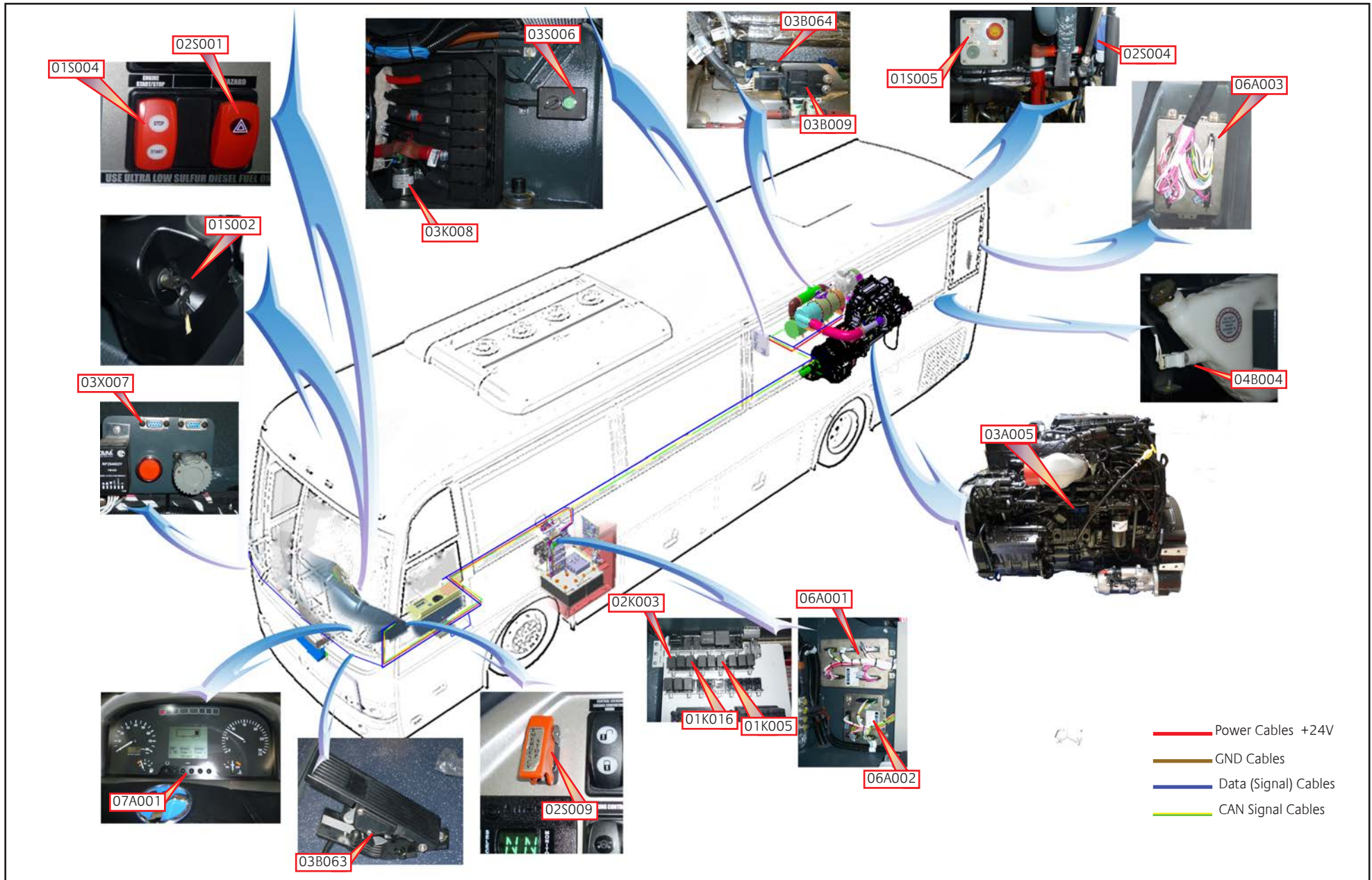
Engine Control System ..... 03.04.A.I-1

## Electrical System Diagram

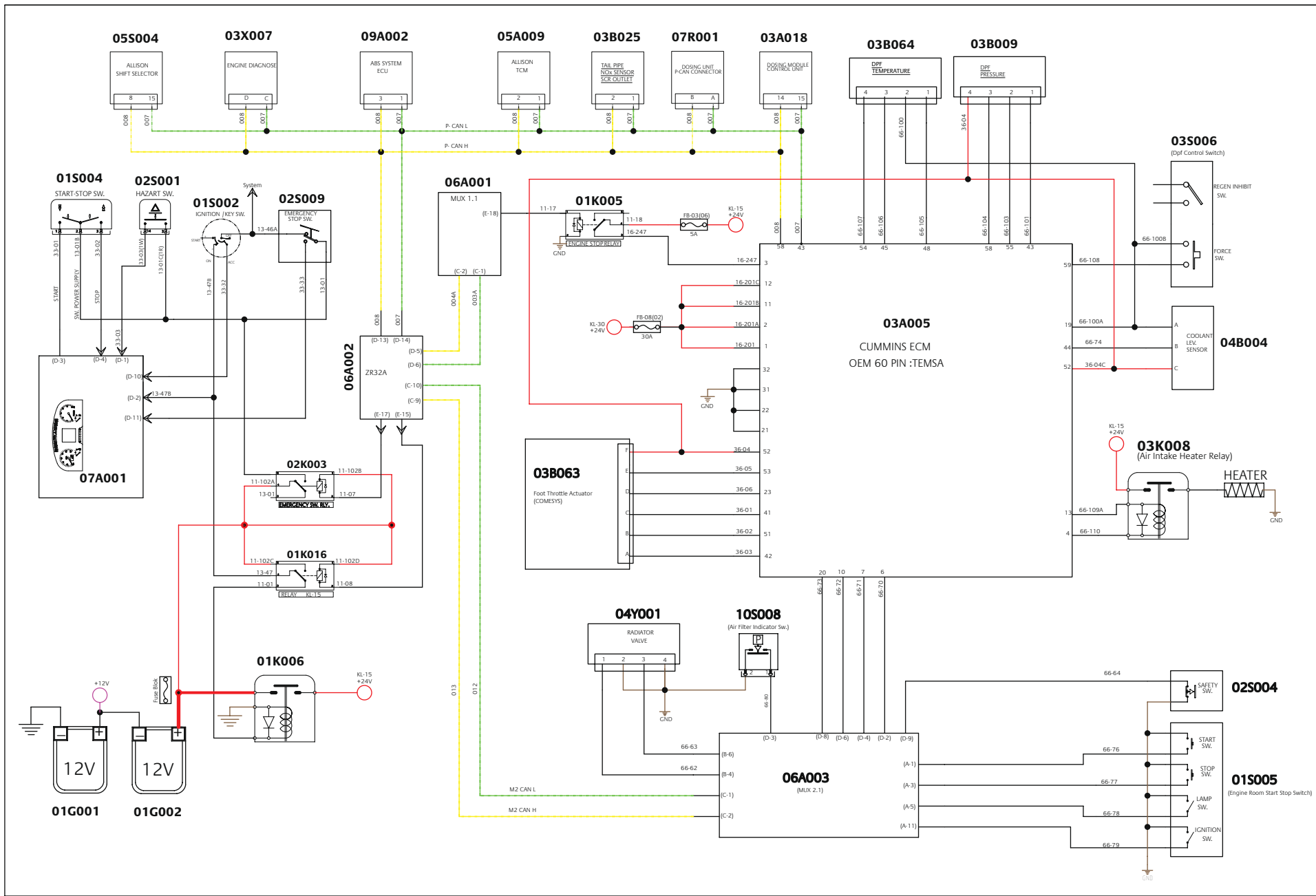
Engine Control System ..... 03.04.A.gw-1

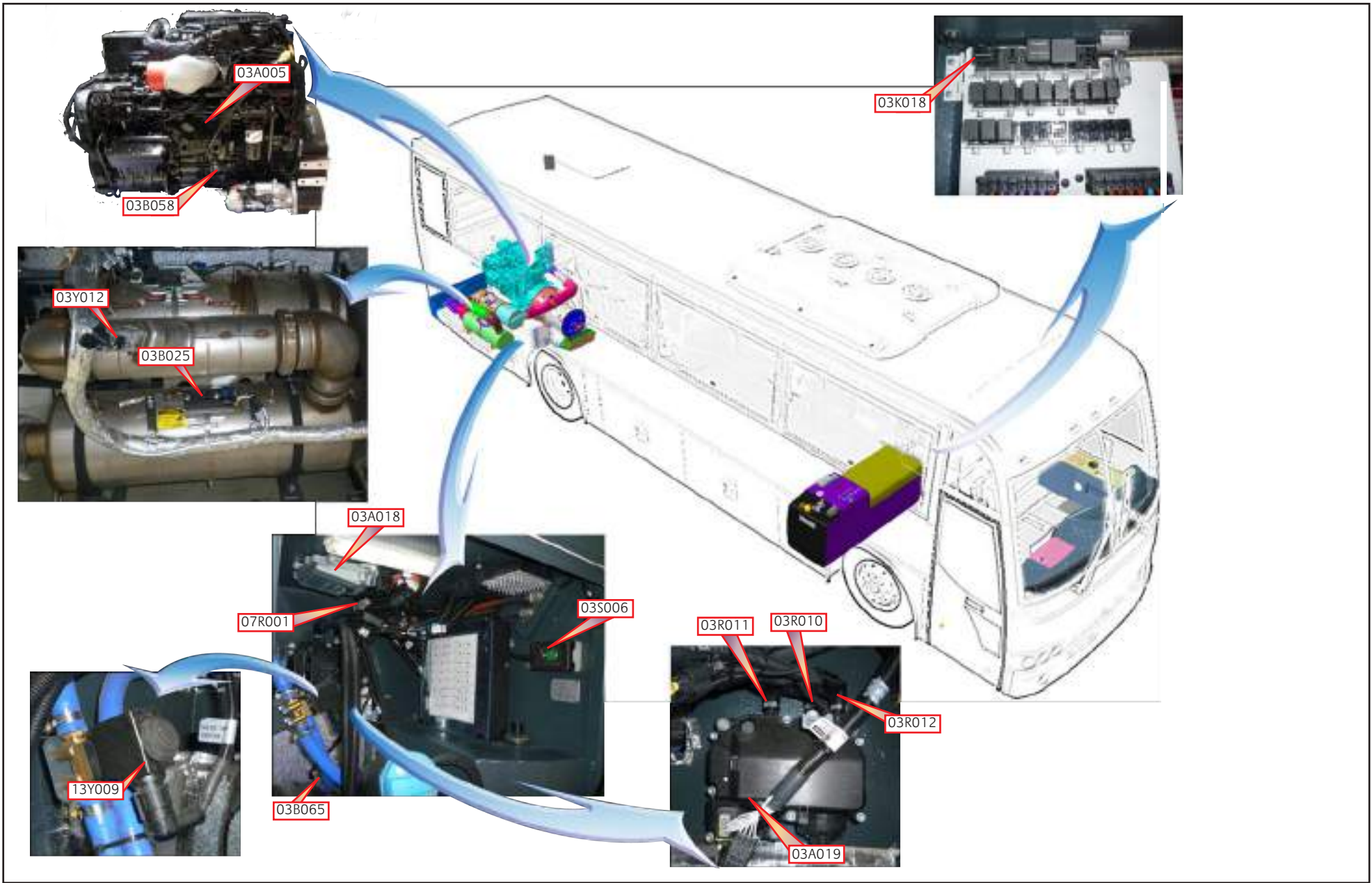
## Wiring Diagram

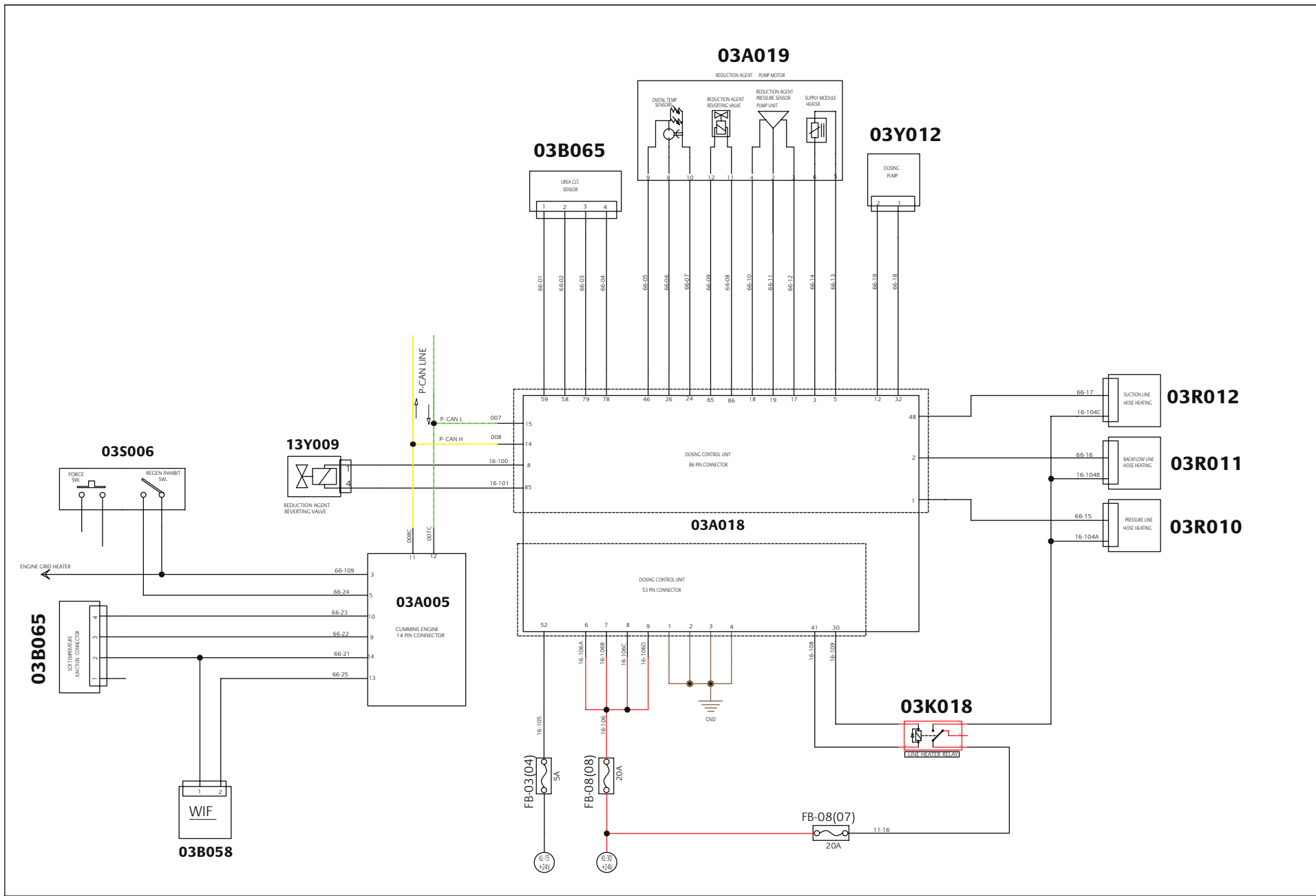
Engine Control System ..... 03.04.A.w-1









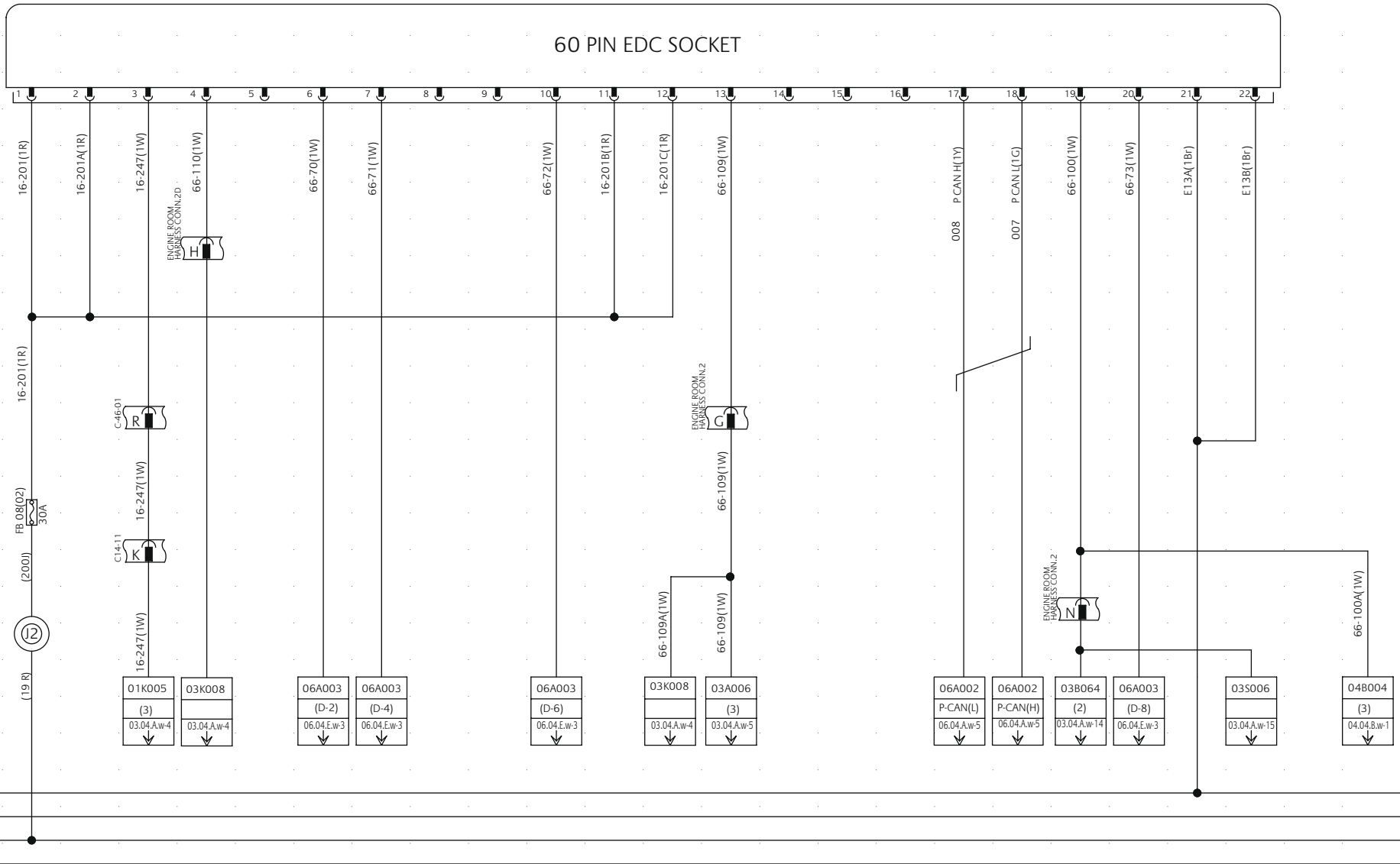


Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A005	13	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
01K005	4	Motor Stop Rölesi	Engine Stop Relay	Relé de Parada del Motor	Relais Arrêt Du Moteur	Rele' Arresto Motore
03K008	5,12	Motor Giriş Hava Isitici Rölesi	Air Intake Heater Relay	Relé del Calentador de la Entrada de Aire	Relay Chauffage Admission D'Air	Rele' Aria Di Aspirazione Riscaldatore
06A003		Mux 2.1	Mux 2.1	Multiplexor 2,1	Mux 2,1	Mux 2,1
04B004	18	Soğutma Maddesi Tamamlama Kabi Seviye Sensörü	Coolant Container Fill Level Sensor	Sensor de Nivel de Llenado de Depósitos de Refrigerante	Capteur Niveau De Rempliss. Réserv. Liq. De Refroidissement	Sensore Livello Del Pieno Di Refrigerante Nel Contenitore
03S006	19	Dizel Partiküler Filtre Kontrol Şalteri	Dpf Control Switch	Interruptor de Control del Filtro de PD	Commutateur De Contrôle Dpf	Interruttore Controllo Dpf
03B064	19	Dizel Partikül Filtresi (Dpf) Çıkışındaki Egzoz Sıcaklığı Sensörü	Exhaust Temperature Sensor Upstream Of Diesel Particulate Filter (Dpf)	Sensor de de Temperatura del Escape Arriba del Filtro de Partículas Diesel (DPF)	Capteur De Temperature Des Gaz D'Échappement Avant Le Filtre À Particules Diesel Dpf	Sensore Temperatura Scarico A Monte Del Filtro Antiparticolato Per Diesel (Dpf)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

03A005

60 PIN EDC SOCKET

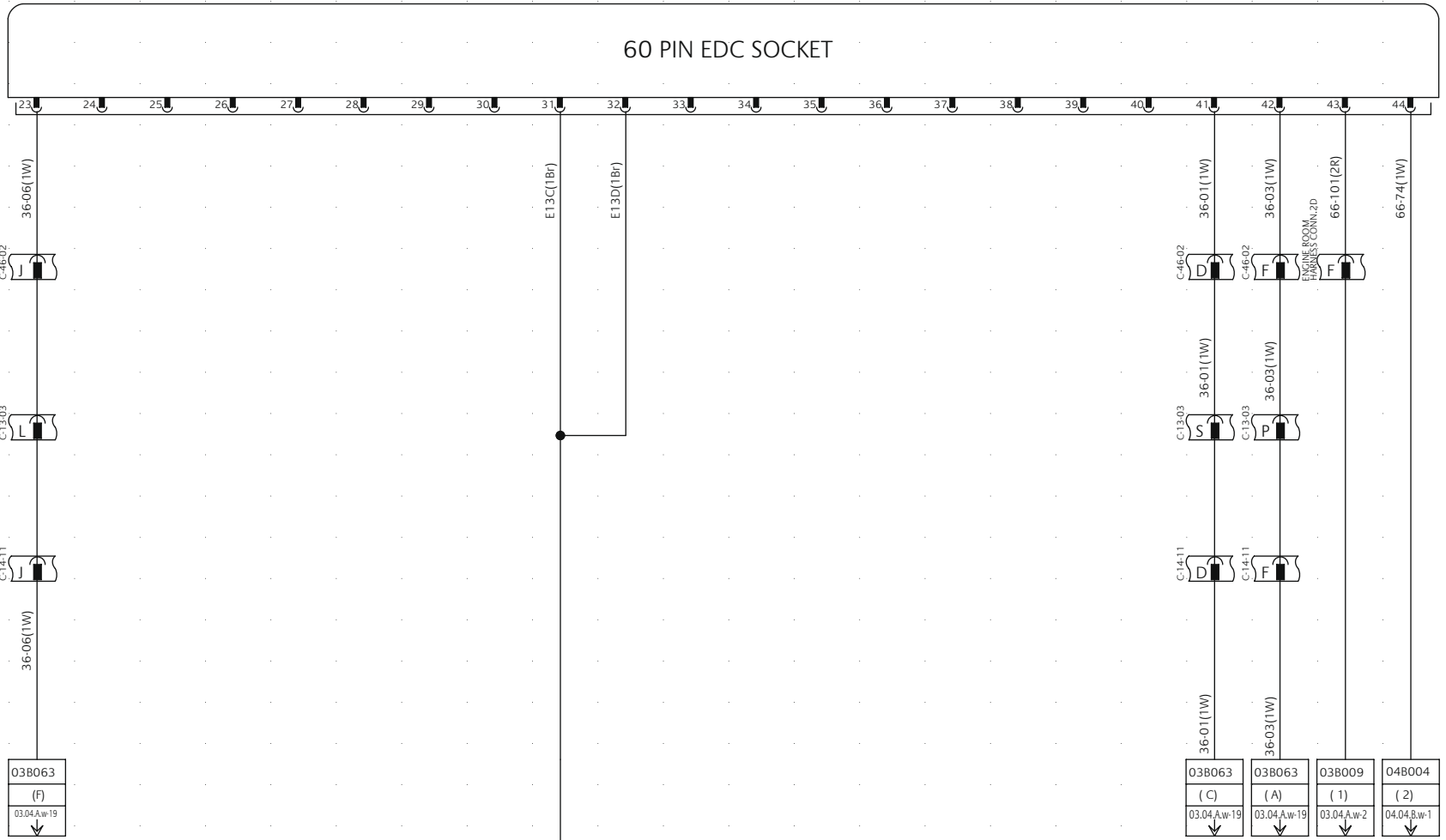


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A005	13	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Com-mande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
03B063	5,23	Gaz Pedali (COMESYS)	Foot Throttle Actuator (COMESYS)	Actuador del Pedal del Acelerador (COMESYS)	Transmetteur De Pédale D'Accélérateur (COMESYS)	Attuatore Acceleratore (COMESYS)
03B009	25	Dizel Partikül Filtresi (Dpf) Çıkışındaki Egzoz Basıncı Sensörü	Exhaust Pressure Sensor Upstream Of Diesel Particulate Filter (Dpf)	Sensor de Presión del Escape Ar-riba del Filtro de Partículas Diesel (DPF)	Capteur De Pression Des Gaz D'Échappement Avant Le Filtre À Particules Diesel Dpf	Sensore Pressione Scarico A Monte Del Filtro Antiparticolato Per Diesel (Dpf)
04B004	25	Soğutma Maddesi Tamamlama Kabi Seviye Sensörü	Coolant Container Fill Level Sensor	Sensor de Nivel de Llenado de Depósitos de Refrigerante	Capteur Niveau De Rempliss. Réserv. Liq. De Refroidissement	Sensore Livello Del Pieno Di Refrig-erante Nel Contenitore

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

03A005



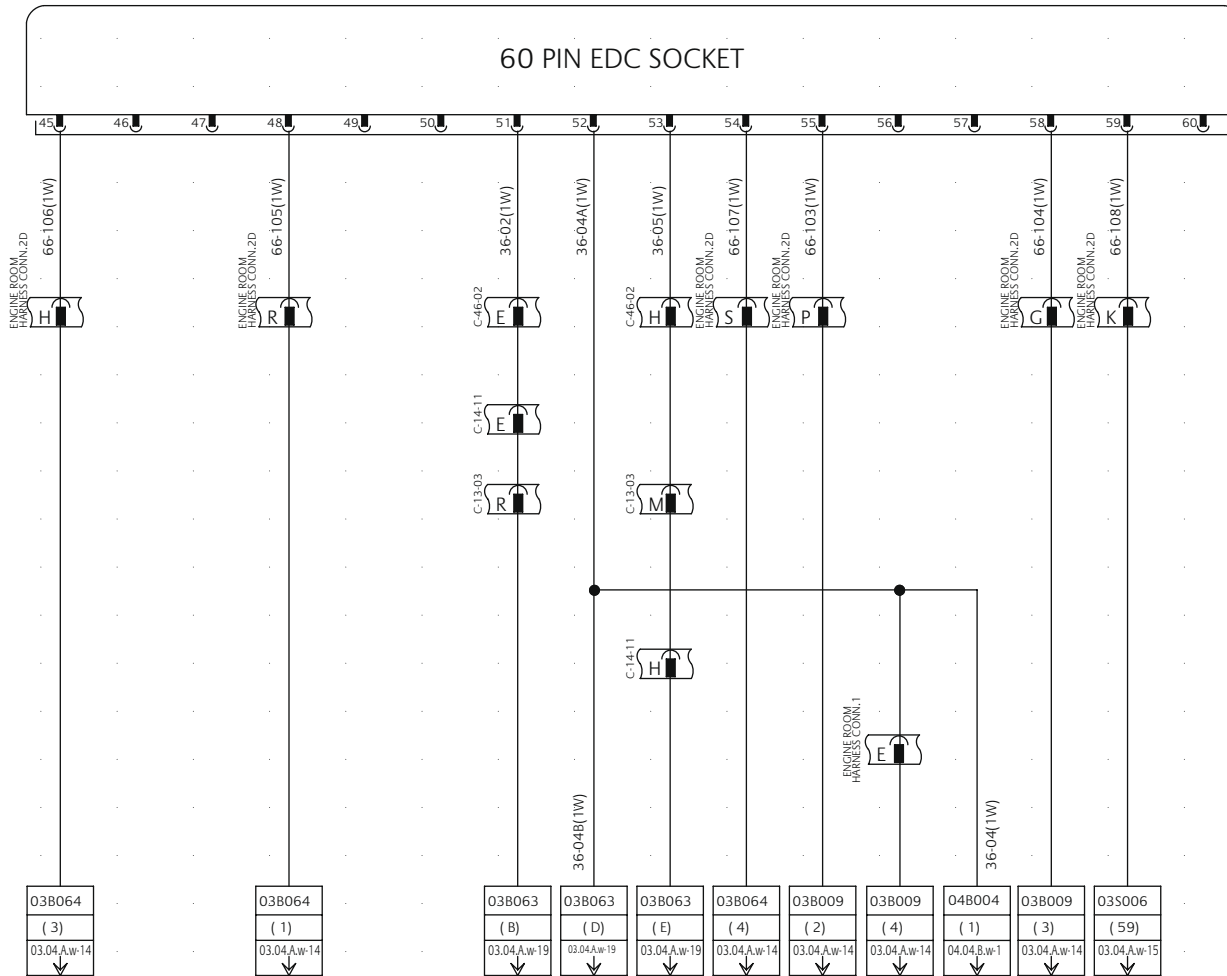
KL 31  
 KL 58  
 KL 30  
 KL 15

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A005	13	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
03B064	45,48,64	Dizel Partikül Filtresi (Dpf) Çıkışındaki Egzoz Sıcaklığı Sensörü	Exhaust Tempeture Sensor Upstream Of Diesel Particulate Filter (Dpf)	Sensor de de Temperatura del Escape Arriba del Filtro de Partículas Diesel (DPF)	Capteur De Temperature Des Gaz D'Échappement Avant Le Filtre À Particules Diesel Dpf	Sensore Temperatura Scarico A Monte Del Filtro Antiparticolato Per Diesel (Dpf)
03B063	51,52,53	Gaz Pedali (COMESYS)	Foot Throttle Actuator (COMESYS)	Actuador del Pedal del Acelerador (COMESYS)	Transmetteur De Pédale D'Accélérateur (COMESYS)	Attuatore Acceleratore (COMESYS)
03B009	55,56,58	Dizel Partikül Filtresi (Dpf) Çıkışındaki Egzoz Basıncı Sensörü	Exhaust Pressure Sensor Upstream Of Diesel Particulate Filter (Dpf)	Sensor de Presión del Escape Arriba del Filtro de Partículas Diesel (DPF)	Capteur De Pression Des Gaz D'Échappement Avant Le Filtre À Particules Diesel Dpf	Sensore Pressione Scarico A Monte Del Filtro Antiparticolato Per Diesel (Dpf)
04B004	58	Soğutma Maddesi Tamamlama Kabi Seviye Sensörü	Coolant Container Fill Level Sensor	Sensor de Nivel de Llenado de Depósitos de Refrigerante	Capteur Niveau De Rempliss. Réserv. Liq. De Refroidissement	Sensore Livello Del Pieno Di Refrigerante Nel Contenitore
01S006	59	KL15 Aktif Etme Şalteri	KL15 Active Switch	Interruptor Activo del KL15	KL15 Commutateur Actif	KL15 Interruttore attivo

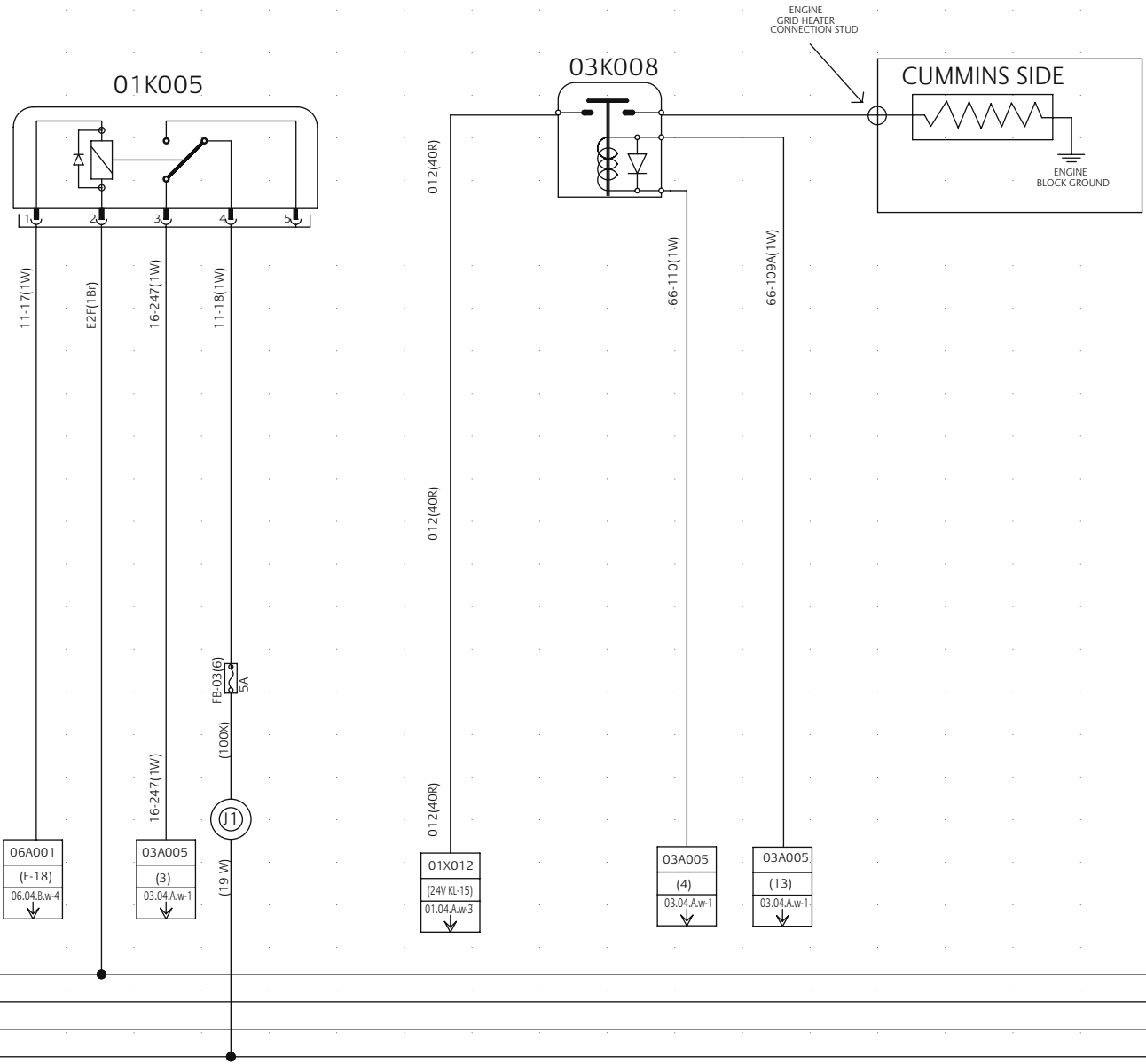


03A005



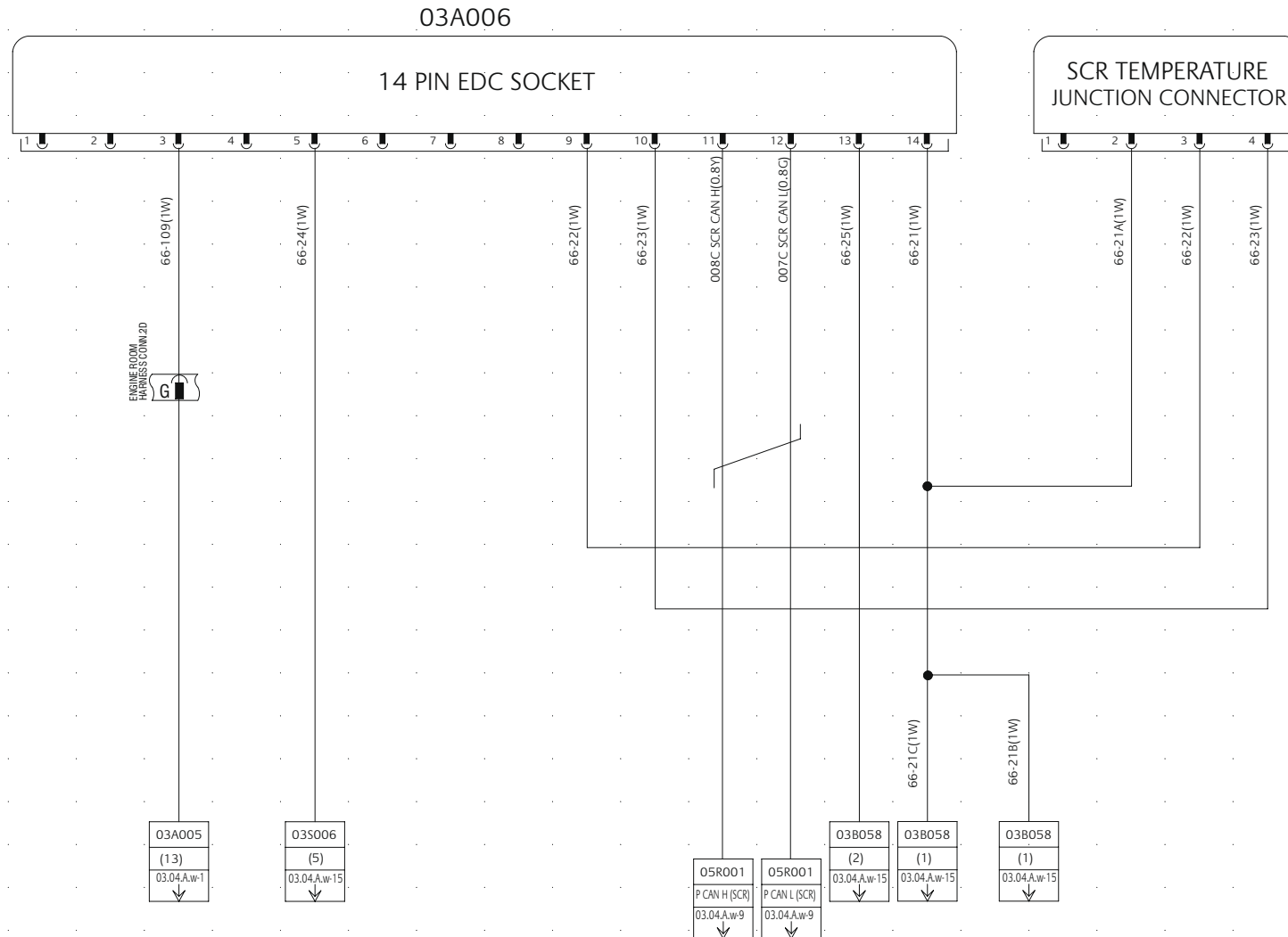
- KL 31
- KL 58
- KL 30
- KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
01K005	10	Motor Stop Rölesi	Engine Stop Relay	Relé de Parada del Motor	Relais Arrêt Du Moteur	Rele' Arresto Motore
06A001	8	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
03A005	10,18,19	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Com- mande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
03K008	16	Motor Giriş Hava Isitici Rölesi	Air Intake Heater Relay	Relé del Calentador de la Entrada de Aire	Relay Chauffage Admission D'Air de Aire	Rele' Aria Di Aspirazione Riscal- datore
01X012	14	6 Bağlantılı Mega Bakır Bara	6 Connected Mega Copper Busbar	6 Conductos de barras del Mega Copper conectados	6 bar connecte mega-cuivre	6 bar mega-rame collegato



KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A006	7	Motor Elektronik Kontrol Ünitesi (14 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module_14 Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
03A005	3	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
03S006	5	Dizel Partiküler Filtre Kontrol Şalteri	Dpf Control Switch	Interruptor de Control del Filtro de PD	Commutateur De Contrôle Dpf	Interruttore Controllo Dpf
03B058	13,14,16	Yakıt Su Seviye İkaz Sensörü (Motor Tarafı)	Water In Fuel Sensor (Motor Side)	Sensor de Agua en el Combustible (Lado del Motor)	Capteur D'Eau Dans Le Carburant (Cote Moteur)	Sensore Acqua Nel Carburante (Lato Motore)



KL 31

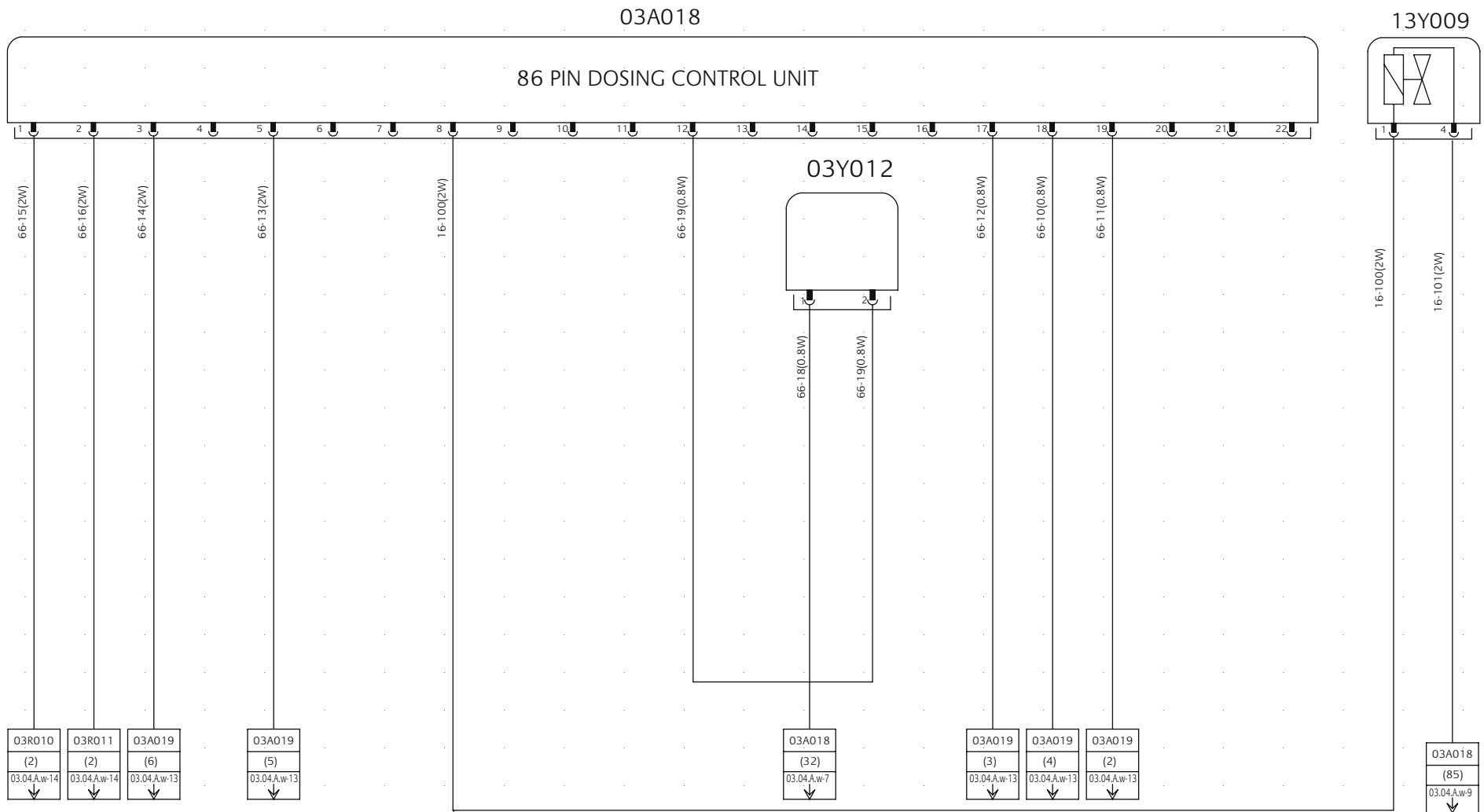
KL 58

KL 30

KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A018	11	Adblue Dozaj Control Ünitesi	Dosing Module Control Unit	Módulo de Control de Dosificación	Module De Commande De Dosage	Modulo Di Controllo Dosaggio
03R010	1	Dozaj Sistemi Isıtıcısı 1 (Basınc Hattı )	Dosing System Heater 1 (Pressure Line)	00000	00000	00000
03R011	2	Dozaj Sistemi Isıtıcısı 2 (Geri Dönüş Hattı )	Dosing System Heater 2 (Back-flow Line)	00000	00000	00000
03A019	3,5,17,18,19	Adblue Dozaj Besleme Ünitesi	Supply Module (Dosing System)	00000	00000	00000
03Y012	14	Adblue Dozaj Valfi	Dosing Module	Módulo de Dosificación	Module De Dosage	Modulo Dosaggio
03A018	14,28	Adblue Dozaj Control Ünitesi	Dosing Module Control Unit	Módulo de Control de Dosificación	Module De Commande De Dosage	Modulo Di Controllo Dosaggio
13Y009	24	Ad Blue Isıtması Valfi	Ad Blue Heating Valve	Válvula de Calefacción AdBlue	Soupape De Chauffage De L'Ad Blue	Valvola Riscaldamento Ad Blue

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25



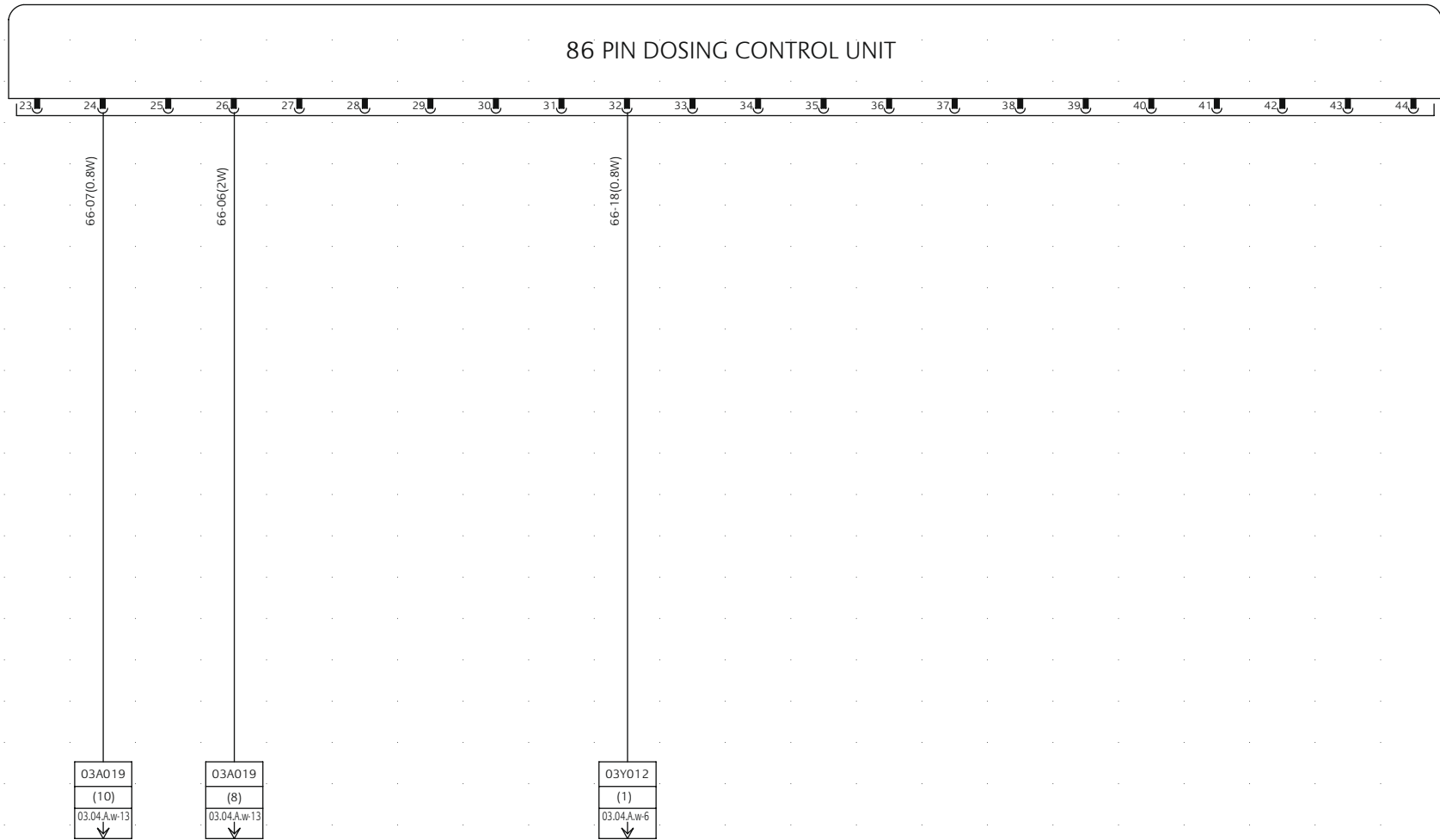
KL 31  
 KL 58  
 KL 30  
 KL 15

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A018	11	Adblue Dozaj Control Ünitesi	Dosing Module Control Unit	Módulo de Control de Dosificación	Module De Commande De Dosage	Modulo Di Controllo Dosaggio
03A019	3,5	Adblue Dozaj Besleme Ünitesi	Supply Module (Dosing System)	00000	00000	00000
03Y012	11	Adblue Dozaj Valfi	Dosing Module	Módulo de Dosificación	Module De Dosage	Modulo Dosaggio



03A018



KL 31

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KL 58

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KL 30

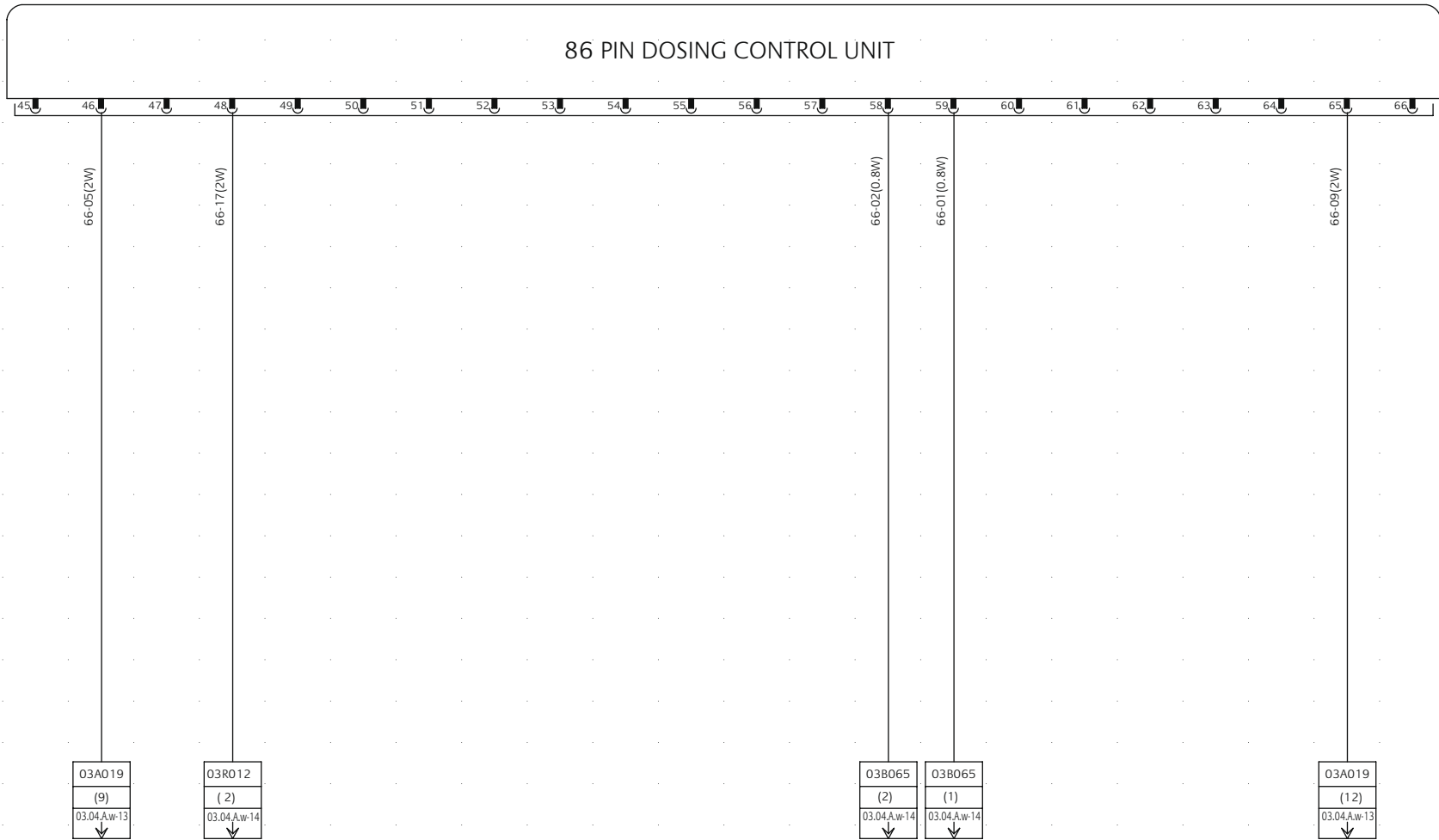
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KL 15

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Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A018	11	Adblue Dozaj Kontrol Ünitesi	Dosing Module Control Unit	Módulo de Control de Dosificación	Module De Commande De Dosage	Modulo Di Controllo Dosaggio
03A019	3,22	Adblue Dozaj Besleme Ünitesi	Supply Module (Dosing System)	00000	00000	00000
03R012	5	Dozaj Sistemi Isıtıcısı 1 (Emiş Hattı )	Dosing System Heater 1 (Suction Line)	00000	00000	00000
03B065	15	Üre Tankı Seviye ve Sıcaklık Sensörü	Urea Clutch Sensor	00000	00000	00000

03A018



KL 31

KL 58

KL 30

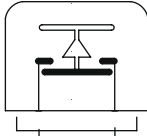
KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A018	11	Adblue Dozaj Control Ünitesi	Dosing Module Control Unit	Módulo de Control de Dosificación	Module De Commande De Dosage	Modulo Di Controllo Dosaggio
03B065	13,14	Üre Tankı Seviye ve Sıcaklık Sensörü	Urea Tank Level and Temp. Sensor	00000	00000	00000
03Y009	20	Motor Freni 1 Solenoid Valfi (Sabit Kisma Tertibatı)	Engine Brake 1 Solenoid Valve (Constant Throttle)	Electroválvula del Freno del Motor 1 (Aceleración Constante)	Electrovanne Frein Moteur 1 (Soupape À Décharge Constante)	Elettrovalvola Freno Motore 1 (Accelerazione Costante)
03A019	21	Adblue Dozaj Besleme Ünitesi	Supply Module (Dosing System)	00000	00000	00000

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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03A018

07R001



66-04(0.8W)

66-03(0.8W)

16-101(2W)

66-08(2W)

16-101(2W)

03B065
(4)
03.04.A.w-14
↓

03B065
(3)
03.04.A.w-14
↓

13Y009
(4)
03.04.A.w-6
↓

03A019
(11)
03.04.A.w-13
↓

06A002
P-CAN(L)
06.04.A.w-5
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06A002
P-CAN(H)
06.04.A.w-5
↓

KL 31

KL 58

KL 30

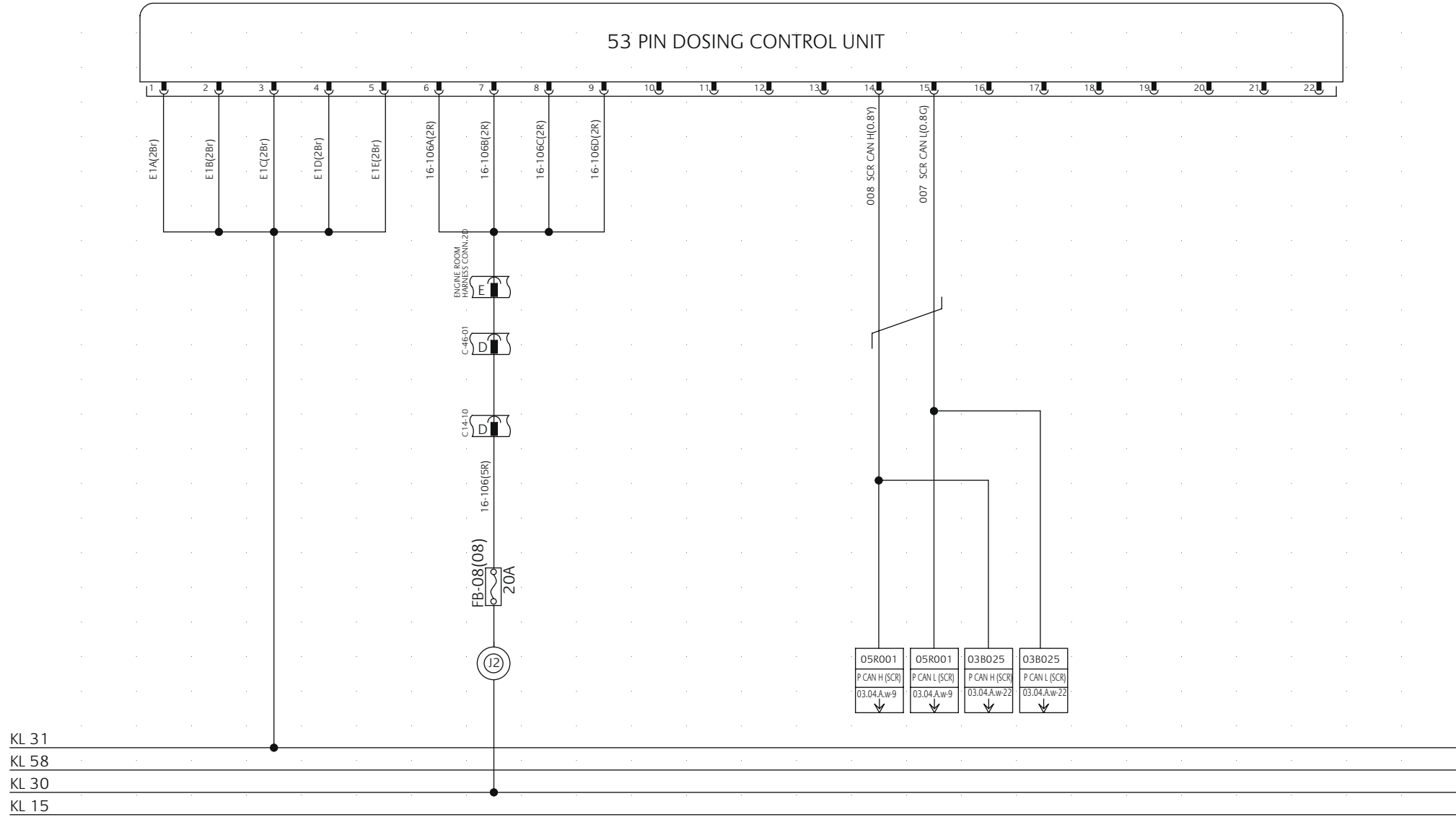
KL 15

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Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A018	11	Adblue Dozaj Control Ünitesi	Dosing Module Control Unit	Módulo de Control de Dosificación	Module De Commande De Dosage	Modulo Di Controllo Dosaggio

03A018

53 PIN DOSING CONTROL UNIT

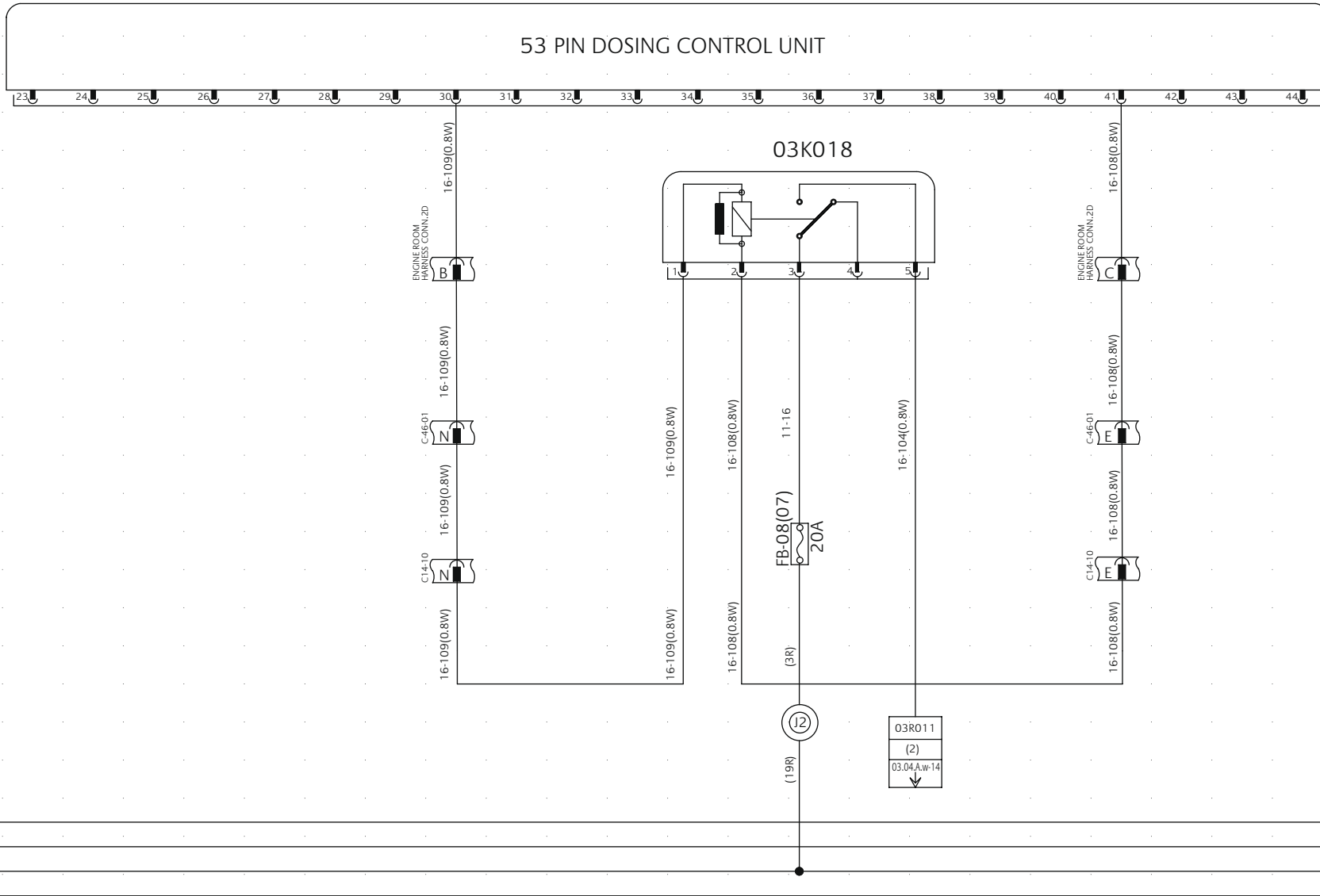


Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A018	11	Adblue Dozaj Control Ünitesi	Dosing Module Control Unit	Módulo de Control de Dosificación	Module De Commande De Dosage	Modulo Di Controllo Dosaggio
03R011	16	Dozaj Sitemi Isıtıcısı 2 (Geri Dönüş Hattı)	Dosing System Heater 2 (Back-flow Line)	00000	00000	00000
03k018	14	Üre sıvısı hattı ısıtma rölesi	Ad Blue Line Heating Relay (cummins Engine)	00000	00000	00000



03A018

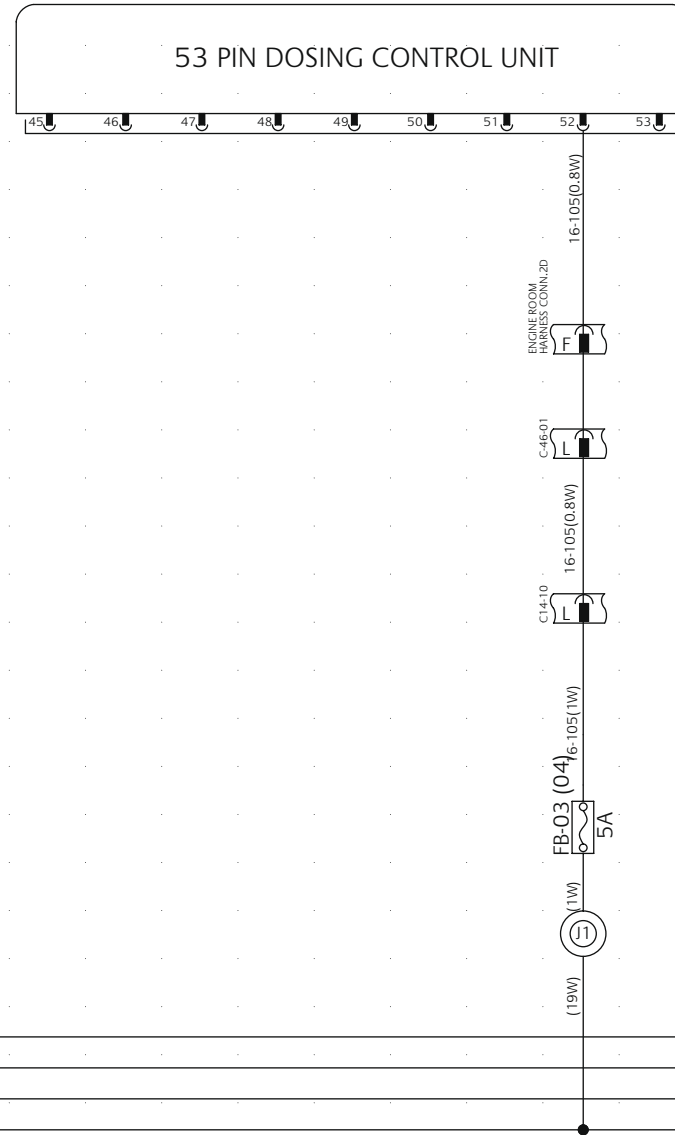
53 PIN DOSING CONTROL UNIT



KL 31  
 KL 58  
 KL 30  
 KL 15

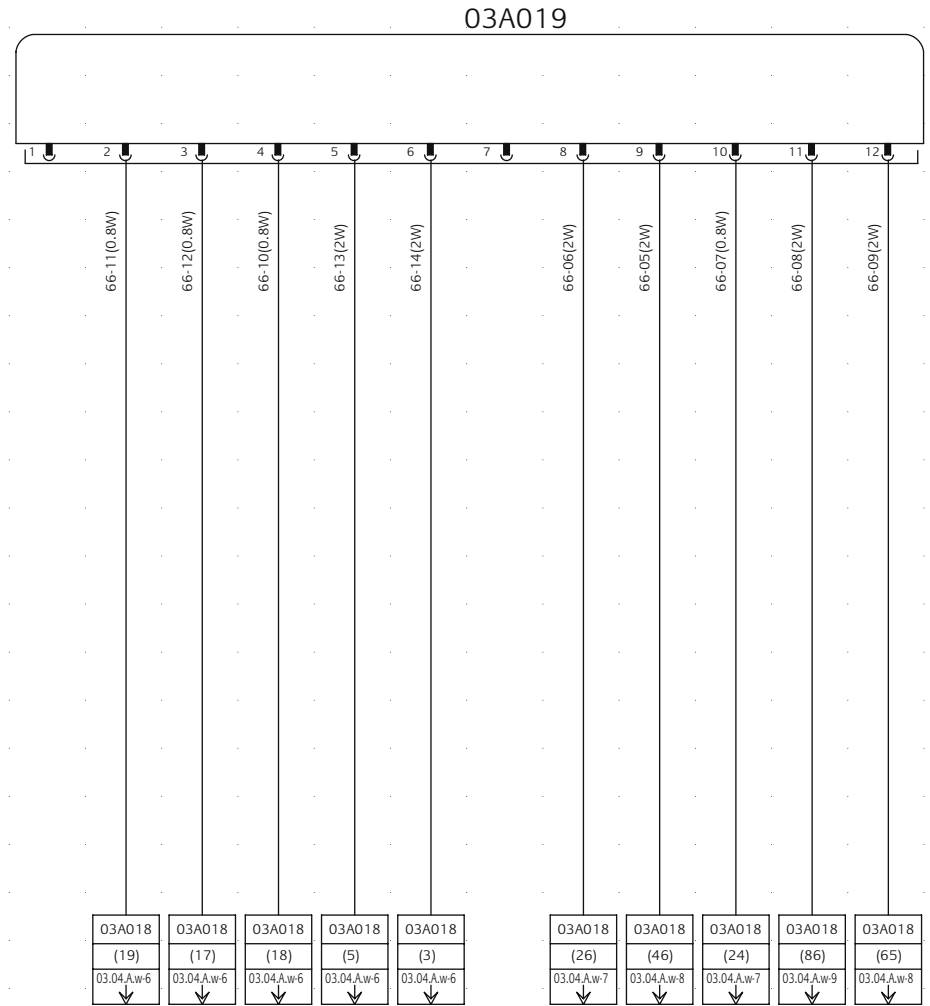
Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A018	11	Adblue Dozaj Control Ünitesi	Dosing Module Control Unit	Módulo de Control de Dosificación	Module De Commande De Dosage	Modulo Di Controllo Dosaggio

03A018



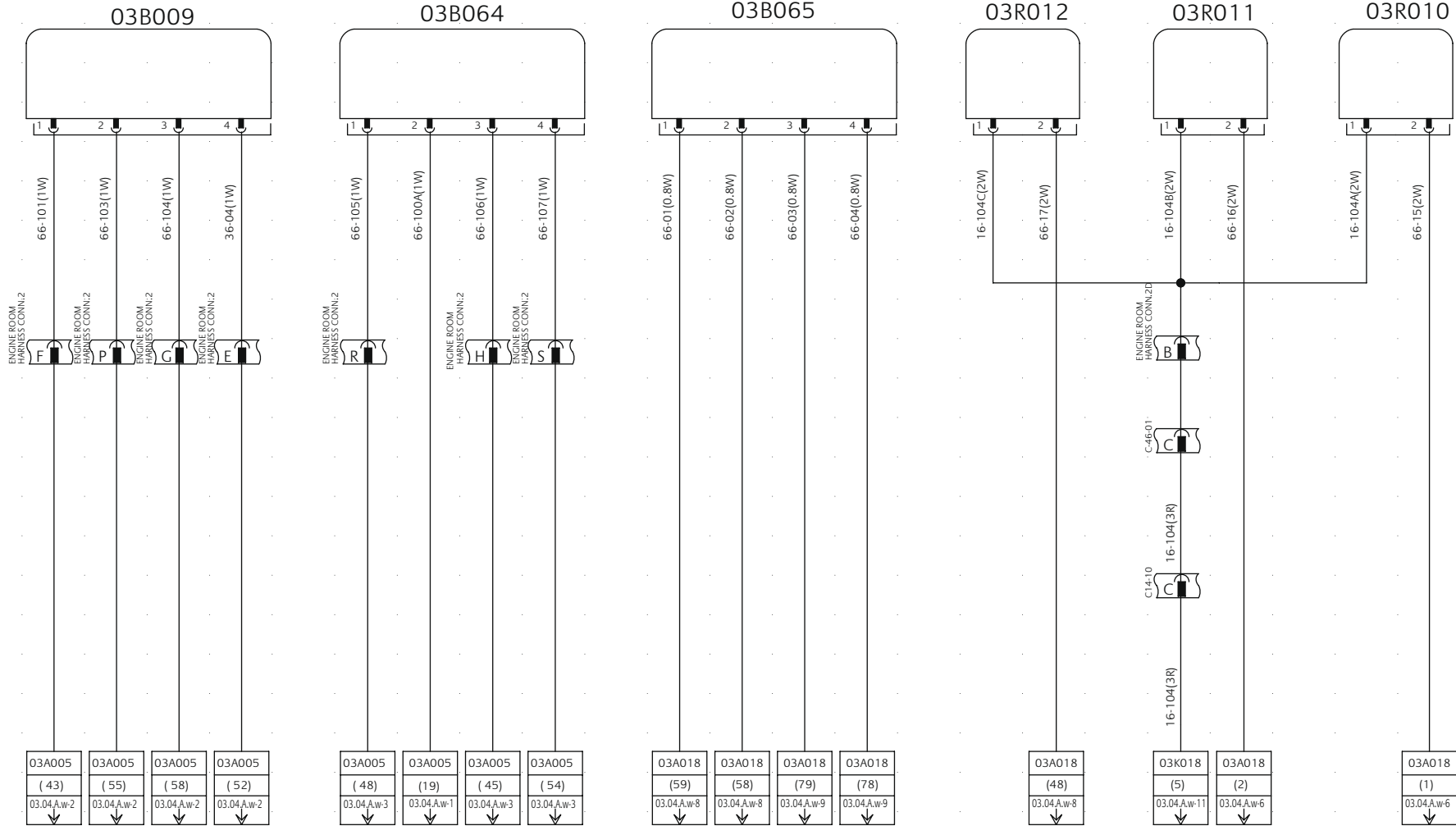
KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03A019	11	Adblue Dozaj Besleme Ünitesi	Supply Module (Dosing System)	00000	00000	00000
03a018	8,9,...	Adblue Dozaj Control Ünitesi	Dosing Module Control Unit	Módulo de Control de Dosificación	Module De Commande De Dosage	Modulo Di Controllo Dosaggio



KL 31  
 KL 58  
 KL 30  
 KL 15

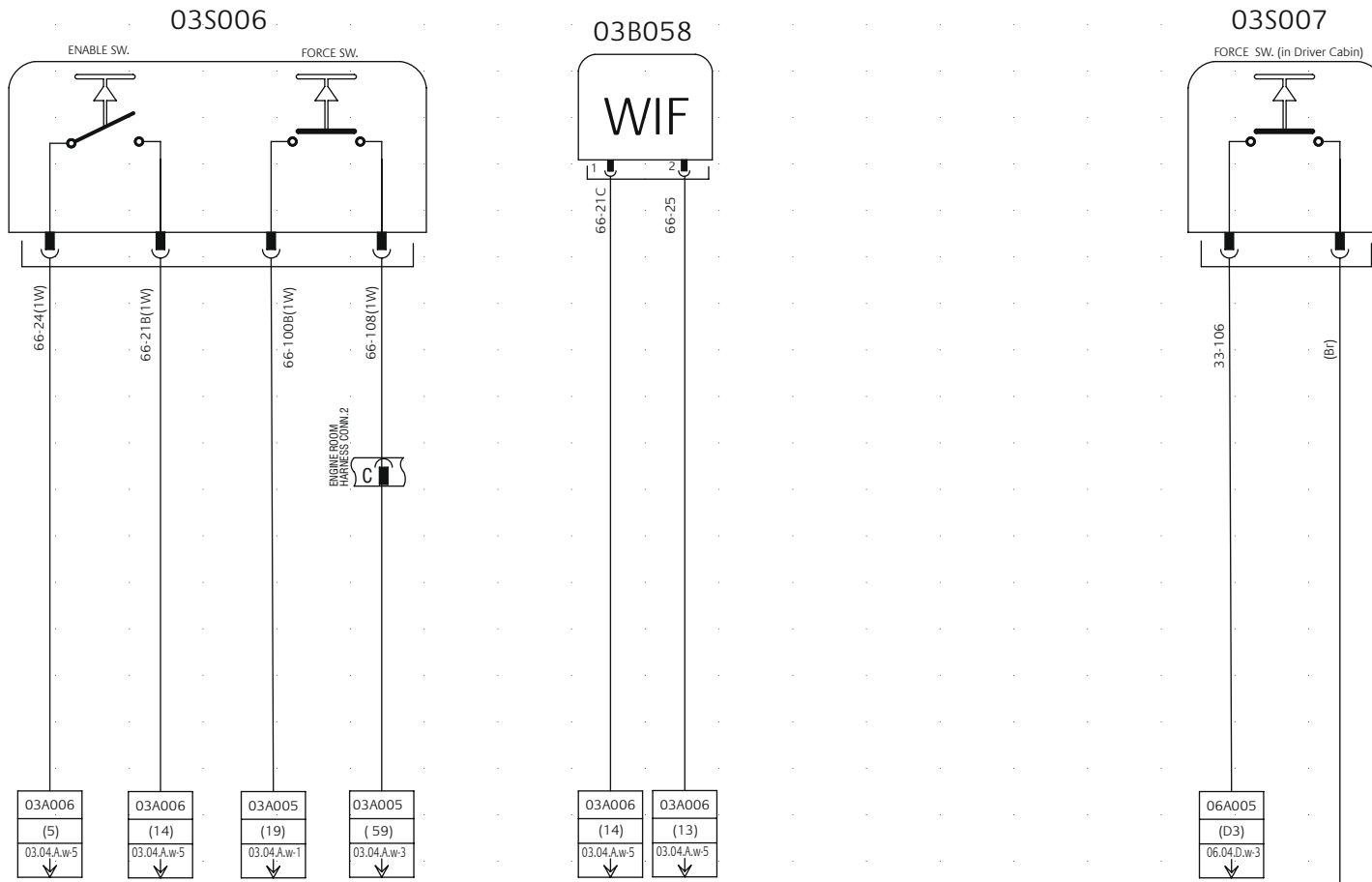




- KL 31
- KL 58
- KL 30
- KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03S006	5	Dizel Partiküler Filtre Kontrol Şalteri	Dpf Control Switch	Interruptor de Control del Filtro de PD	Commutateur De Contrôle Dpf	Interruttore Controllo Dpf
03A006	3,5	Motor Elektronik Kontrol Ünitesi (14 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module_14 Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
03A005	7,8	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
03B058	11	Yakit Su Seviye İkaz Sensörü (Motor Tarafı)	Water In Fuel Sensor (Motor Side)	Sensor de Agua en el Combustible (Lado del Motor)	Capteur D'Eau Dans Le Carburant (Cote Moteur)	Sensore Acqua Nel Carburante (Lato Motore)

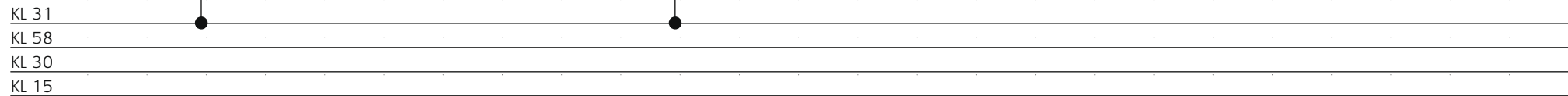
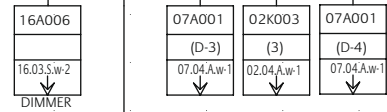
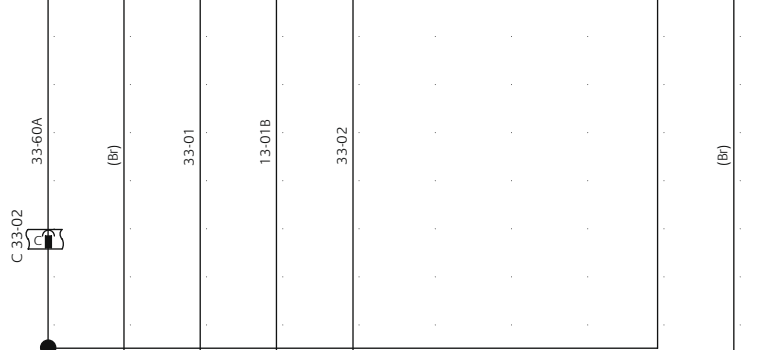
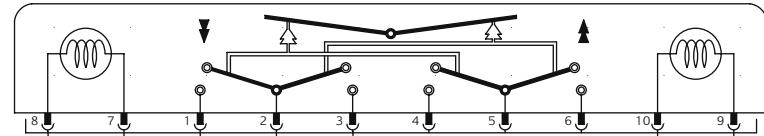




KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
01S004	6	Motor Açma Kapama Şalteri	Engine Start Stop Control Switch	Interruptor de Control de Arranque/Parada del Motor	Contacteur De Commande Demarrage Arrêt Du Moteur	Interruttore Di Controllo Arresto Avvio Del Motore
07A001	4,5	Kombi Gösterge	Instrument Cluster	Grupo de Instrumentos	Combiné D'Instruments	Gruppo Strumentazione
02K003	5	Acil Durum K115 Kesme Rolesi	Emergency Stop K115 Cut-Off Relay	Relés de Corte K115 de Parada de Emergencia	Relais De Coupure K115 D'Arret D'Urgence	Rele' Di Arresto Per Arresto Di Emergenza K115

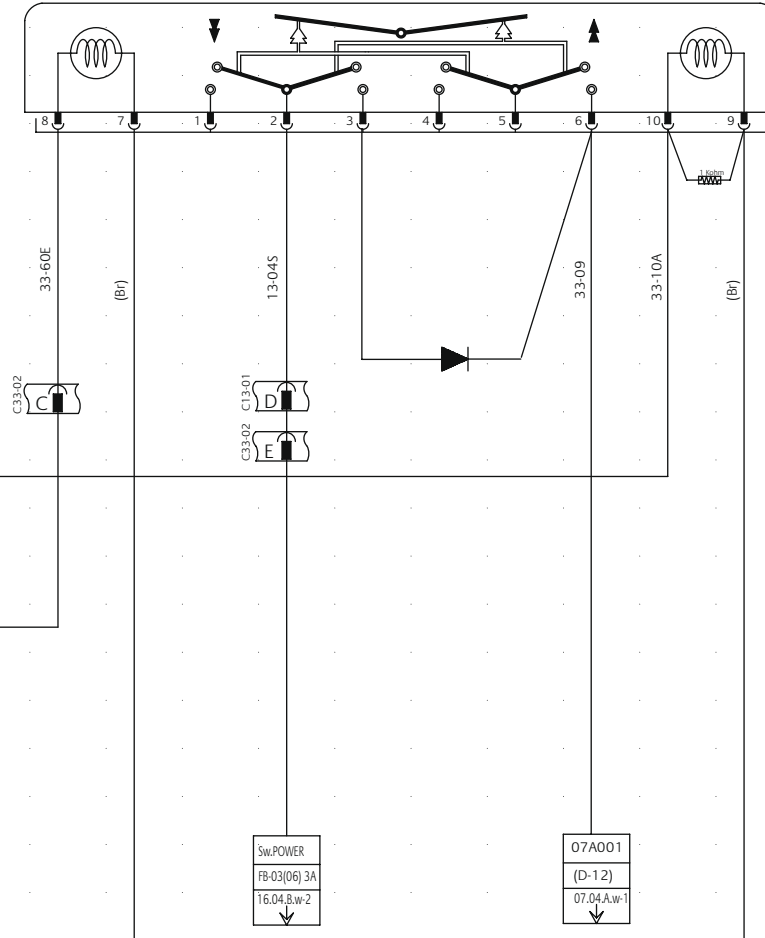
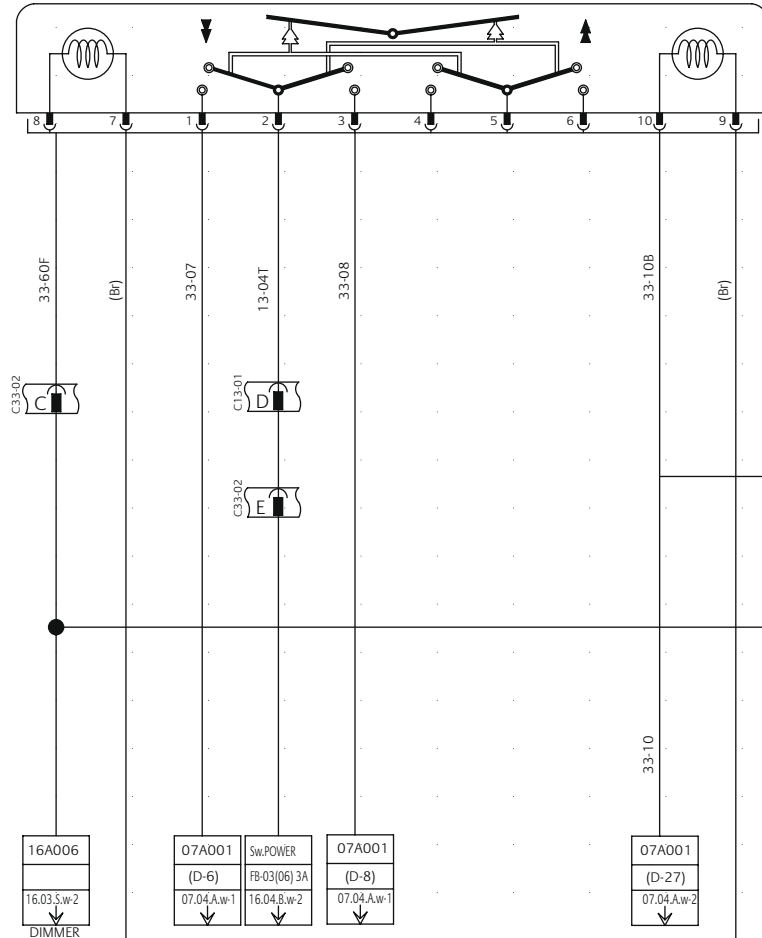
# 01S004



Code	Part No	Türkçe	English	Spanish	Français	Italiano
03S004	6	Hız Sabitleyici Ayarlama Şalteri	Cruise Control Set/Resume Switch	Interrupor de Activación/Reanudación del Control de Crucero	Bouton De Commande Reglage/ Reprise Regulateur De Vitesses	Interruttore Per Impostazione/ Ritorno Cruise Control
07A001	4,6,10,18	Kombi Gösterge	Instrument Cluster	Grupo de Instrumentos	Combiné D'Instruments	Gruppo Strumentazione
03S002	18	Hız Sabitleyici Kontrol Şalteri	Cruise Control Active Switch	Interrupor de Control de Crucero Activo	Bouton De Commande Regulateur De Vitesses	Interruttore Cruise Control Attivo

### 03S004

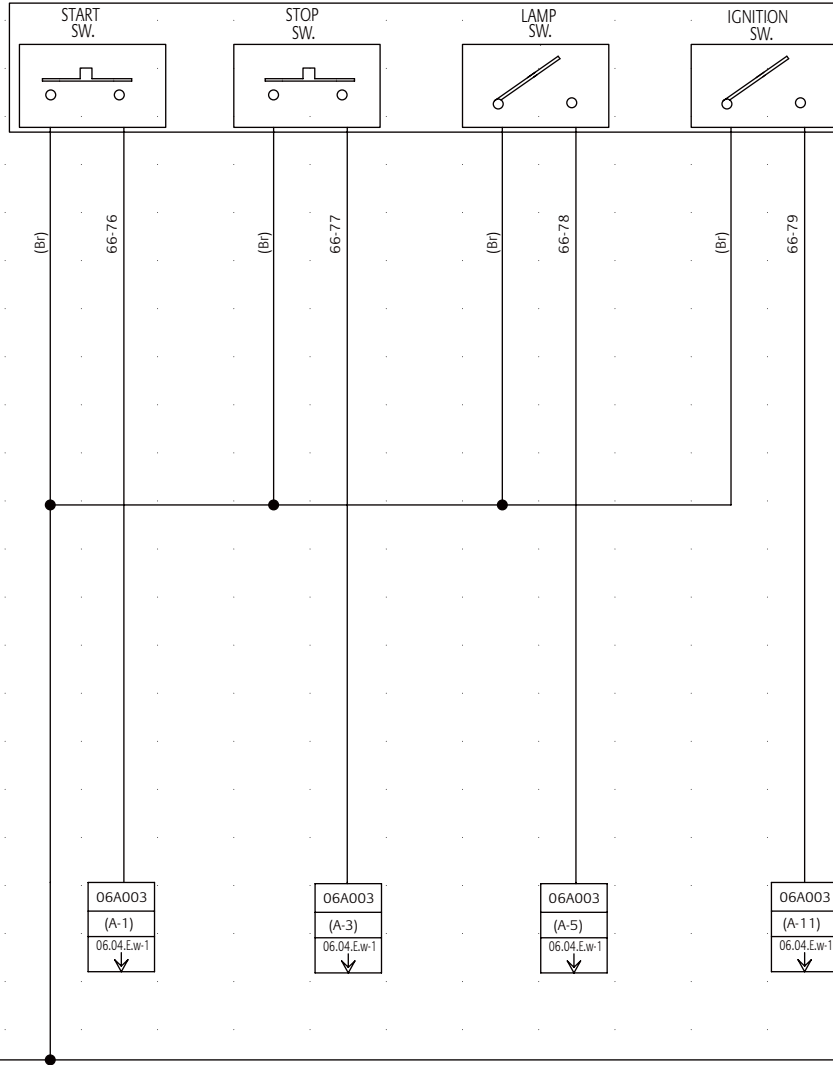
### 03S002



KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
01S005	7	Motor Odasi Araç Çalıştırma/Durdurma Şalteri	Engine Room Start Stop Switch	Interruptor de Arranque/Parada del Compartimento del Motor	Commutateur Demarrage Arrêt Du Bloc Moteur	Interruttore Di Arresto Avvio Del Compartimento Motore
06A003	3,6,9,12	Mux 2.1	Mux 2.1	Multiplexor 2,1	Mux 2,1	Mux 2,1

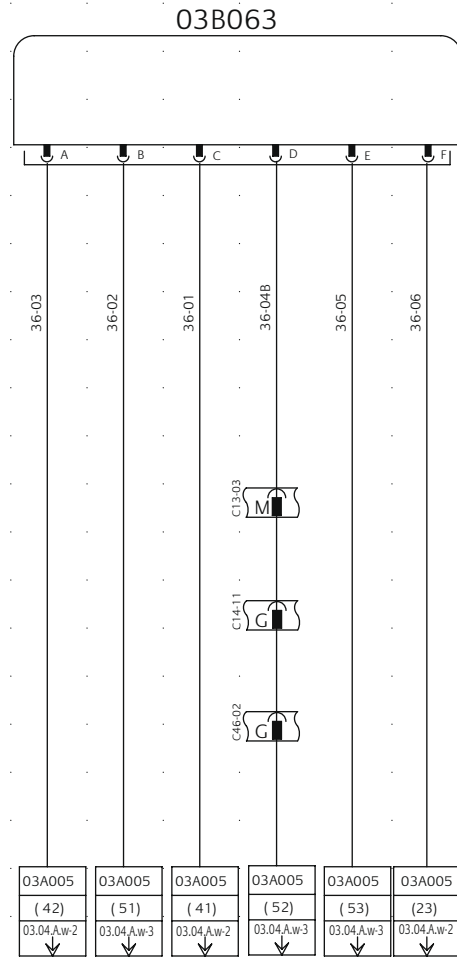
# 01S005



KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03B063	8	Gaz Pedali (COMESYS)	Foot Throttle Actuator (COMESYS)	Actuador del Pedal del Acelrador (COMESYS)	Transmetteur De Pédale D'Accélérateur (COMESYS)	Attuatore Acceleratore (COMESYS)
03A005	7-10	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)



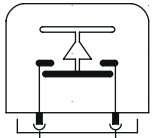


KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
02S004	1	Motor Bölmesi Kapağı Güvenlik Şalteri	Engine Compartment Lid Safety Switch	Interruptor de la puerta de seguridad del Compartimento del Motor	Couvercle du Compartiment Moteur interrupteur de securite	Il coperchio del vano motore interruttore di sicurezza
06A003	1	Mux 2.1	Mux 2.1	Multiplexor 2,1	Mux 2,1	Mux 2,1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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02S004



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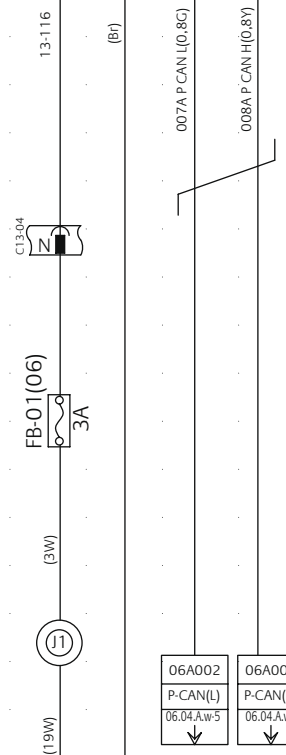
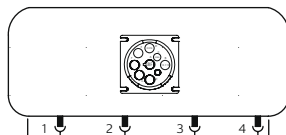


KL 31  
 KL 58  
 KL 30  
 KL 15

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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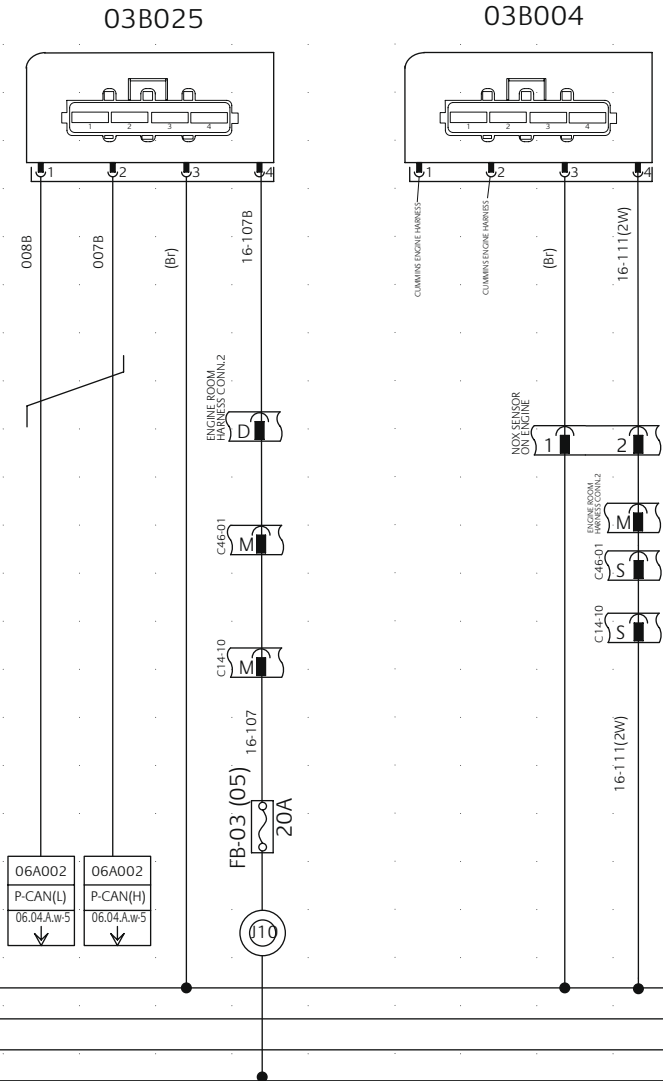
Code	Part No	Türkçe	English	Spanish	Français	Italiano
03X007	11	Engine Dpf Connector	Engine Dpf Connector	Conector del Fdp del Motor	Contacteur Dpf Du Moteur	Connettore Dpf Motore

03X007



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 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
03B025	12	Scr Katalizatörü Çıkışındaki Azot Oksit Sensörü	Nitrogen Oxides Sensor, Exhaust Gas Downstream Of Scr Catalytic Converter	Sensor de Óxidos de Nitrógeno, Gases del Escape Bajo el Catalizador Scr	Capteur Oxydes D'Azote, Gaz D'Echappement En Aval Du Convertisseur Catalytique Scr	Sensore Ossidi Di Azoto, Convertitore Flusso Gas Di Scarico Del Scr Catalitico
03B004	17	Azot Oksit Sensörü	Nitrogen Oxides Sensor	Sensor de Óxidos de Nitrógeno	Capteur Oxyde D'Azote	Sensore Ossidi Di Azoto



KL 31  
 KL 58  
 KL 30  
 KL 15





# 04

# ENGINE WATER COOLING & MOTORFAN SYSTEMS

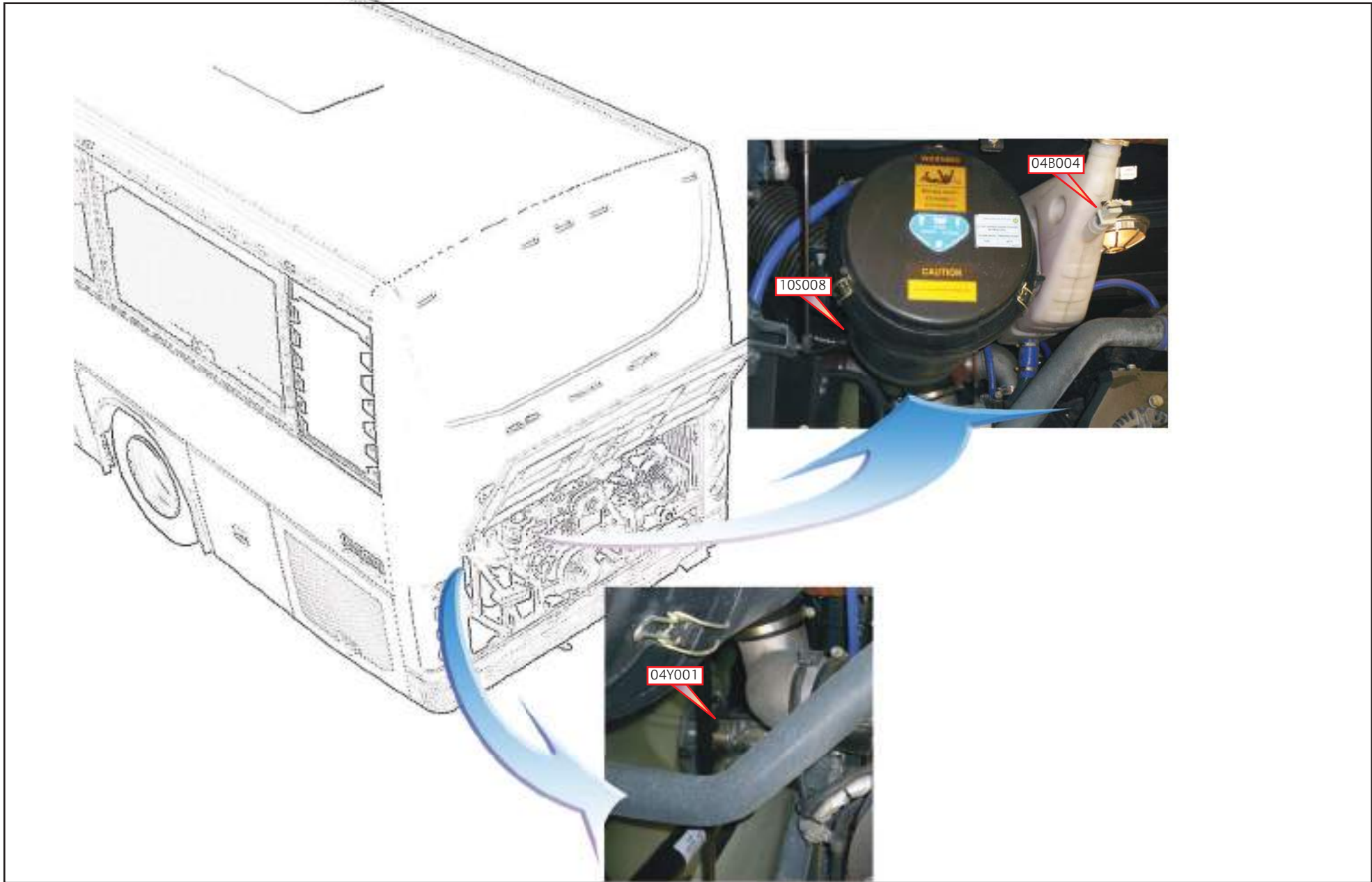
## Locations

Engine Coolant Sensors ..... 04.04.A.I-1

## Wiring Diagram

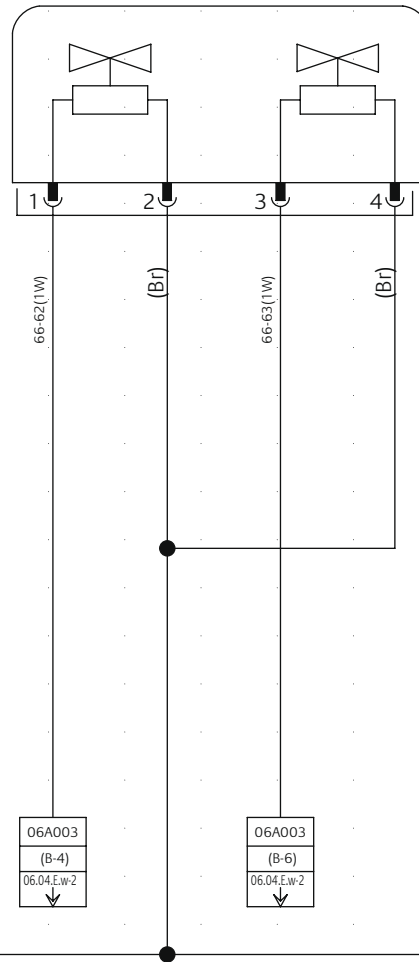
Engine Coolant Container ..... 04.04.A.w-1

Code	Part No	Türkçe	English	Spanish	Français	Italiano
04B004	14	Soğutma Maddesi Tamamlama Kabi Seviye Sensörü	Coolant Container Fill Level Sensor	Sensor de Nivel de Llenado de Depósitos de Refrigerante	Capteur Niveau De Rempliss. Réserv. Liq. De Refroidissement	Sensore Livello Del Pieno Di Refrigerante Nel Contenitore
10S008	11,15	Hava Filtresi Göstergesi Şalteri	Air Filter Indicator Switch	Interruptor indicador del filtro de aire	"Switch Air indicateur du filtre"	"Air Switch indicatore filtro"
04Y001		Oransal Valf (Radyatör)	Proportional Valve (Radiator)	Válvula Proporcional (Radiador)	Soupape Proportionnelle (Radiator)	Valvola Proporzionale (Radiator)



Code	Part No	Türkçe	English	Spanish	Français	Italiano
04Y001	14	Oransal Valf (Radyatör)	Proportional Valve (Radiator)	Válvula Proporcional (Radiador)	Soupape Proportionnelle (Radiateur)	Valvola Proporzionale (Radiatore)
06A003	11,15	Mux 2.1	Mux 2.1	Multiplexor 2,1	Mux 2,1	Mux 2,1

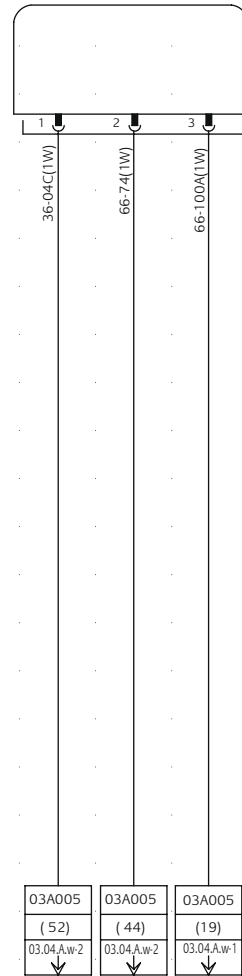
04Y001



KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
04B004	12	Soğutma Maddesi Tamamlama Kabi Seviye Sensörü	Coolant Container Fill Level Sensor	Sensor de Nivel de Llenado de Depósitos de Refrigerante	Capteur Niveau De Rempliss. Réserv. Liq. De Refroidissement	Sensore Livello Del Pieno Di Refrigerante Nel Contenitore
03A005	11,12,13	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)

04B004

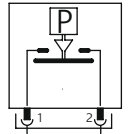


KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
10S008	11	Hava Filtresi Göstergesi Şalteri	Air Filter İndicator Switch	Interruptor indicador del filtro de aire	"Switch Air indicateur du filtre "	"Air Switch indicatore filtro "
06A003	11	Mux 2.1	Mux 2.1	Multiplexor 2,1	Mux 2,1	Mux 2,1



10S008



66-80

(Br)

66-80

(Br)



16-215(1W)



16-215(1W)



16-215(1W)



KL 31  
 KL 58  
 KL 30  
 KL 15



# 05

# TRANSMISSION AND RETARDER SYSTEMS

## Locations

Automatic Transmission System (ALLISON) ..... 05.04.A.l-1

## Electrical System Diagram

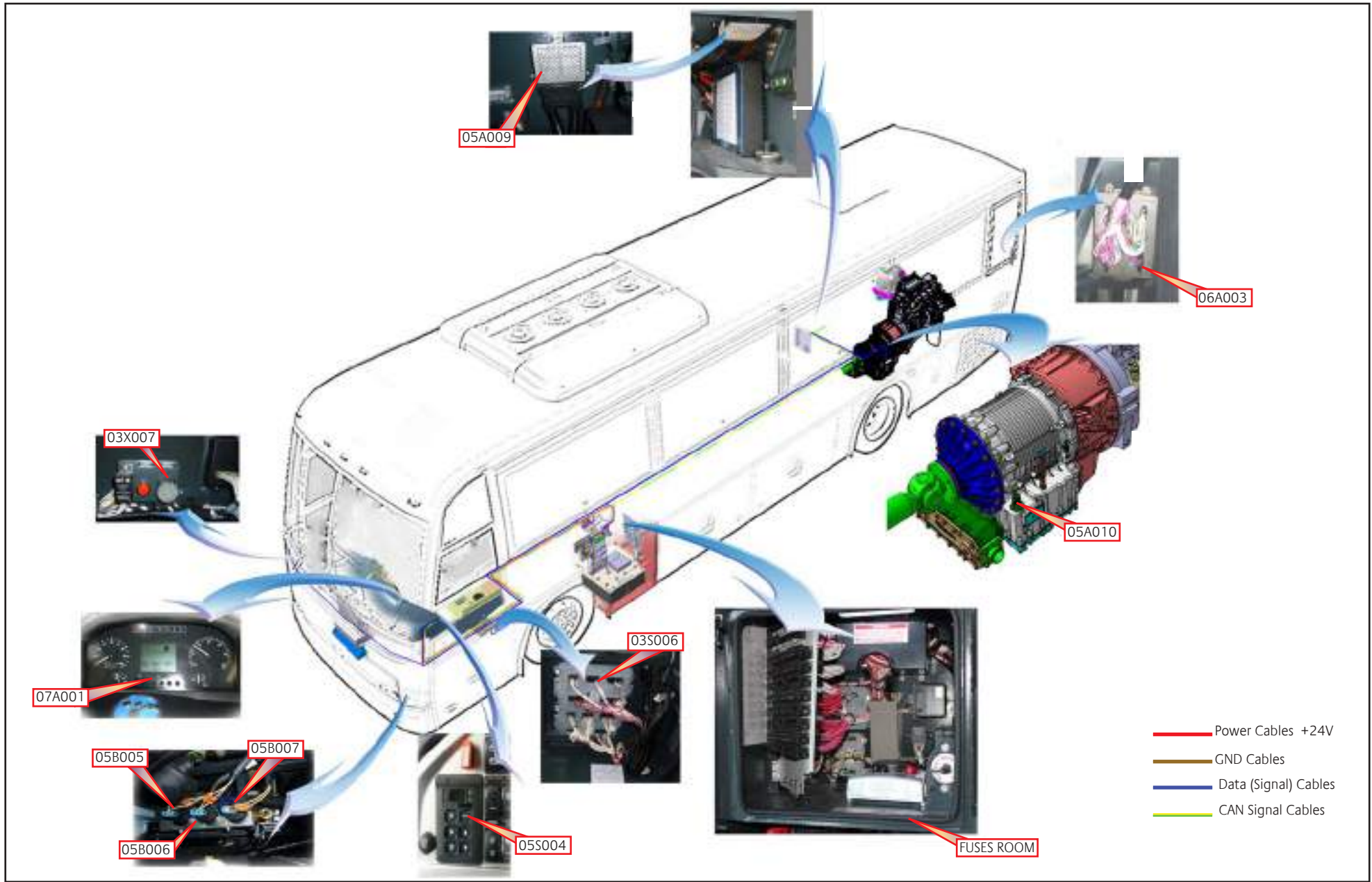
Automatic Transmission System (ALLISON) ..... 05.04.A.gw-1

## Wiring Diagram

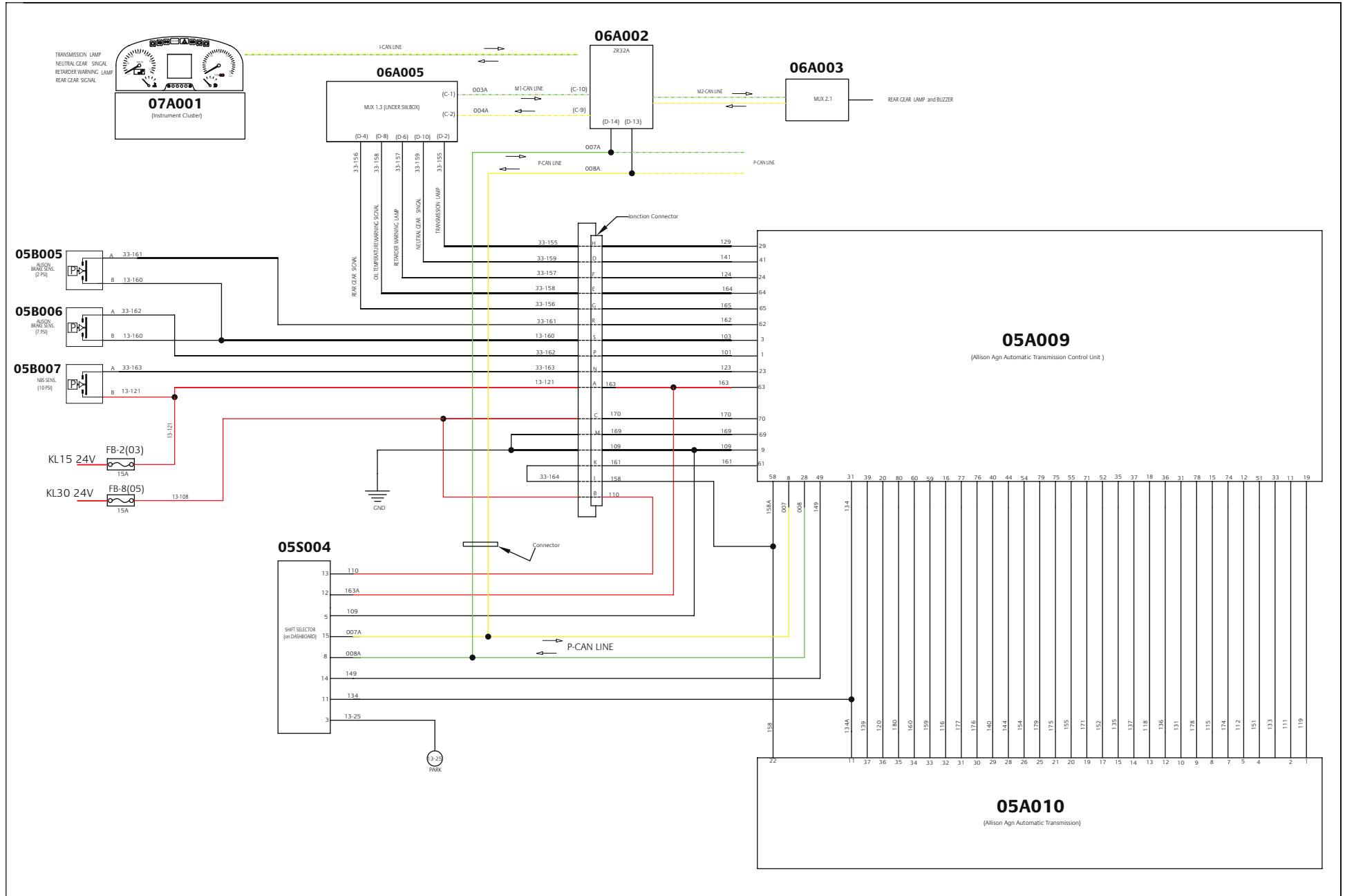
Automatic Transmission System (ALLISON) ..... 05.04.A.w-1

## General Information

Diagnostic and Fault Codes ..... 05.04.A.fc-1



# System Design

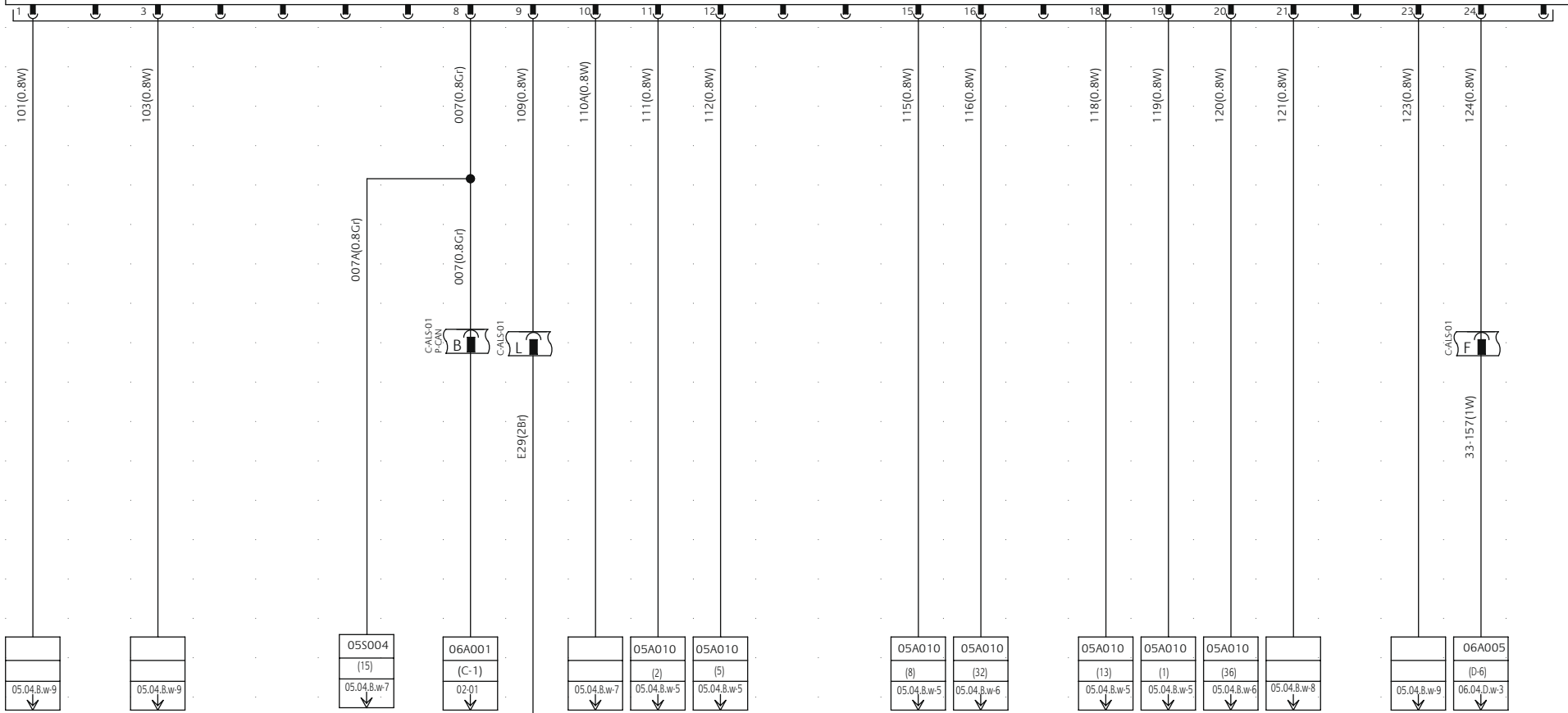


Code	Part No	Türkçe	English	Spanish	Français	Italiano
05A009	12	Agn Otomatik Şanziman Kumanda Cihazı, Allison	Allison Agn Automatic Transmission Control Unit	Unidad de Control de Transmisión Automática Allison Agn	Transmission Automatique Voith	Unita' Di Controllo Trasmissione Automatica Allison Agn
05S004	11	Şanziman Vites Seçim Şalteri (Voith/ Zf Allison)	Shift Selector (Voith / Zf / Allison)	Selector de Cambios (Voith / ZF / Allison)	Selecteur De Vitesses (Voith / Zf / Allison)	Selettore Cambio (Voith / Zf / Allison)
06A001	8	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
05A010	11,12,15 ...	Agn Otomatik Şanziman, Allison	Allison Agn Automatic Transmission	Transmisión Automática Allison Agn	Boîte De Vitesses Automatique Agn Allison	Trasmissione Automatica Allison Agn
06A005	24	Mux 1.3	Mux 1.3	Multiplexor 1,3	Mux 1,3	Mux 1,3

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

05A009

TCM



KL 31  
 KL 58  
 KL 30  
 KL 15

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

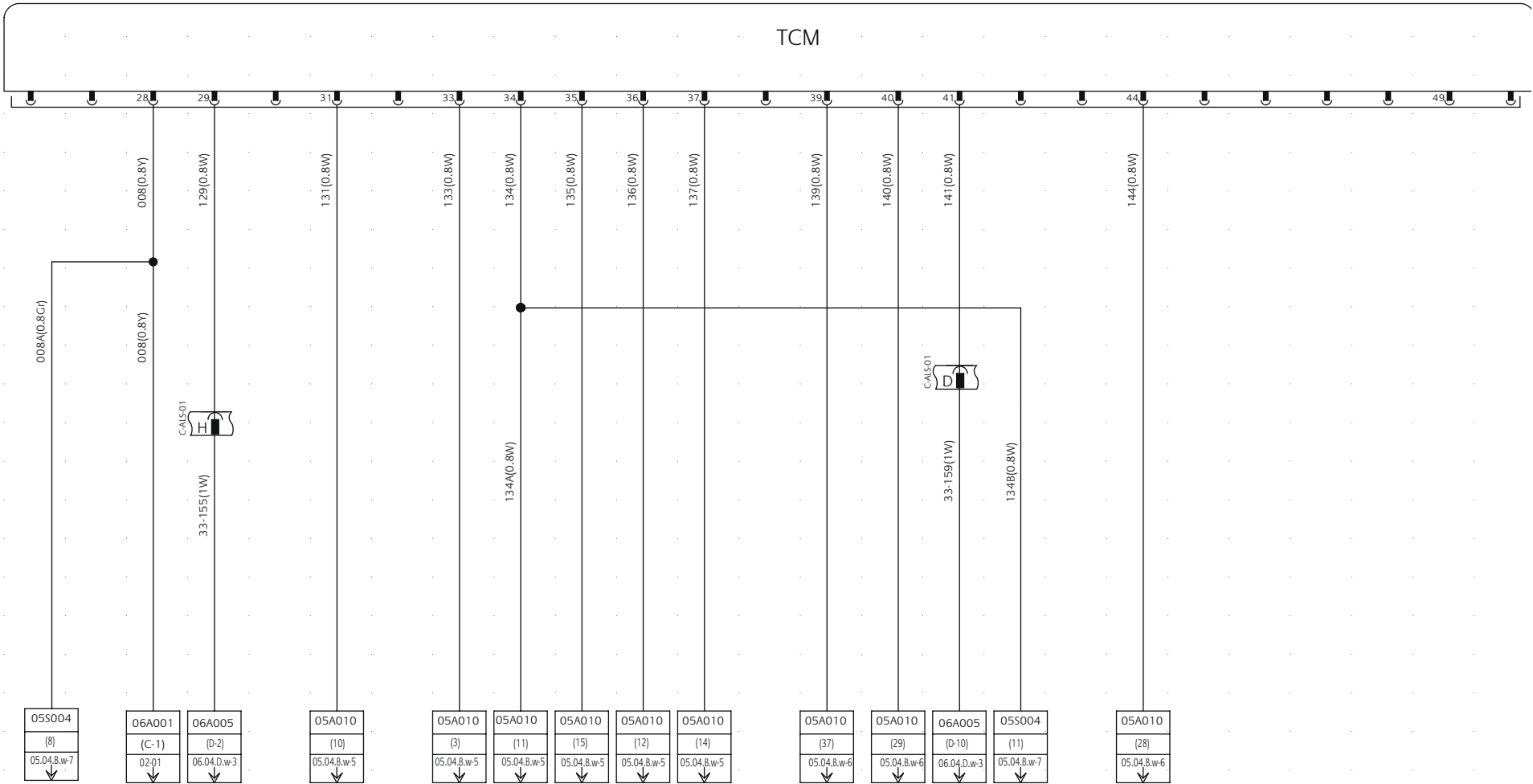
Code	Part No	Türkçe	English	Spanish	Français	Italiano
05A009	12	Agn Otomatik Şanziman Kumanda Cihazı, Allison	Allison Agn Automatic Transmission Control Unit	Unidad de Control de Transmisión Automática Allison Agn	Transmission Automatique Voith	Unita' Di Controllo Trasmissione Automatica Allison Agn
05S004	2,17,24	Şanziman Vites Seçim Şalteri (Voith / Zf Allison)	Shift Selector (Voith / Zf / Allison)	Selector de Cambios (Voith / ZF / Allison)	Selecteur De Vitesses (Voith / Zf / Allison)	Selettore Cambio (Voith / Zf / Allison)
06A001	3	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
05A010	6, 8,9, ...	Agn Otomatik Şanziman, Allison	Allison Agn Automatic Transmission	Transmisión Automática Allison Agn	Boîte De Vitesses Automatique Agn Allison	Trasmissione Automatica Allison Agn
06A005	16	Mux 1.3	Mux 1.3	Multiplexor 1,3	Mux 1,3	Mux 1,3



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

05A009

TCM



KL 31

KL 58

KL 30

KL 15

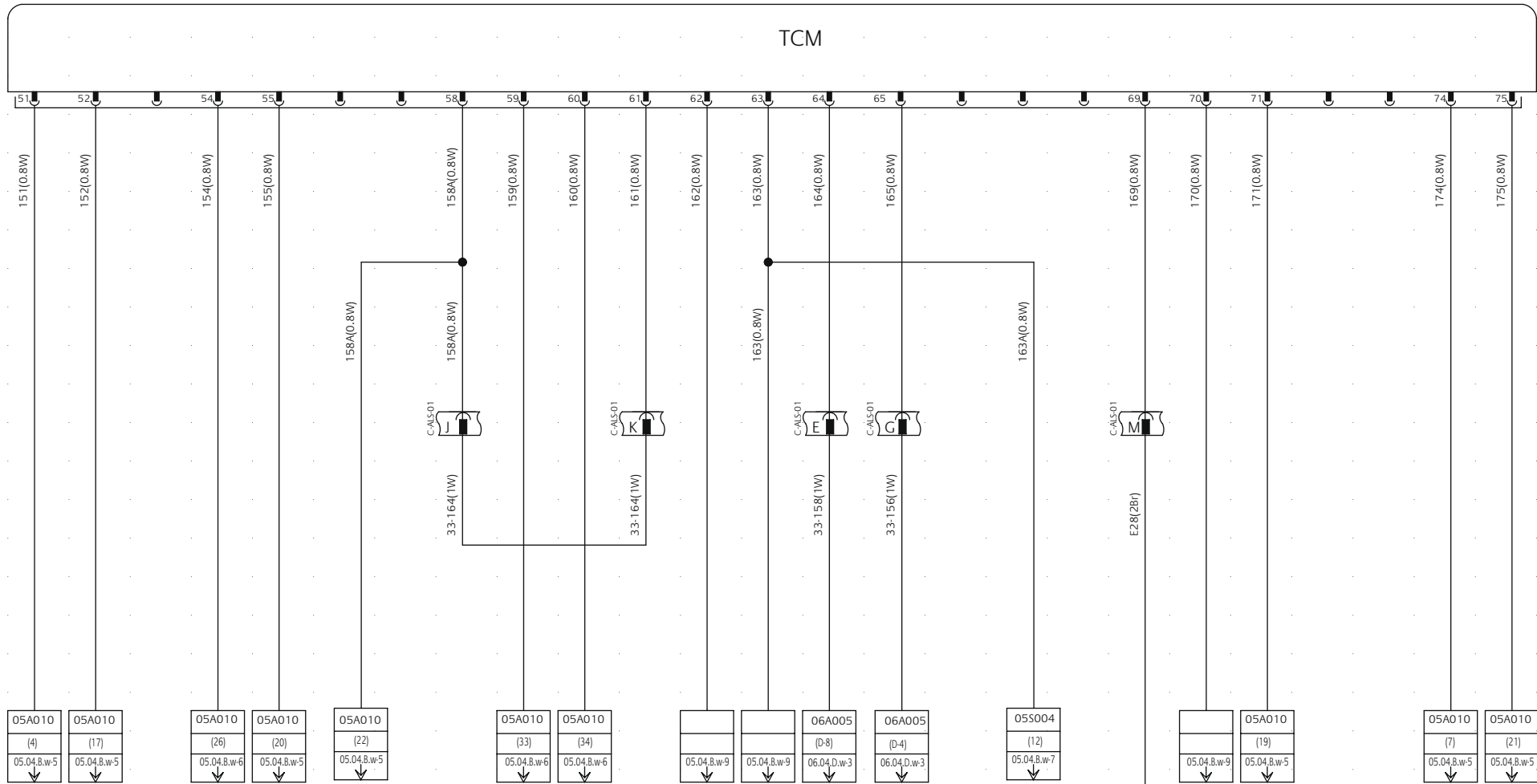
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
05A009	12	Agn Otomatik Şanziman Kumanda Cihazı, Allison	Allison Agn Automatic Transmission Control Unit	Unidad de Control de Transmisión Automática Allison Agn	Transmission Automatique Voith	Unita' Di Controllo Trasmissione Automatica Allison Agn
05S004	17	Şanziman Vites Seçim Şalteri (Voith / Zf Allison)	Shift Selector (Voith / Zf / Allison)	Selector de Cambios (Voith / ZF / Allison)	Selecteur De Vitesses (Voith / Zf / Allison)	Selettore Cambio (Voith / Zf / Allison)
05A010	4, 5,6, ...	Agn Otomatik Şanziman, Allison	Allison Agn Automatic Transmission	Transmisión Automática Allison Agn	Boîte De Vitesses Automatique Agn Allison	Trasmissione Automatica Allison Agn
06A005	14,15,	Mux 1.3	Mux 1.3	Multiplexor 1,3	Mux 1,3	Mux 1,3

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

05A009

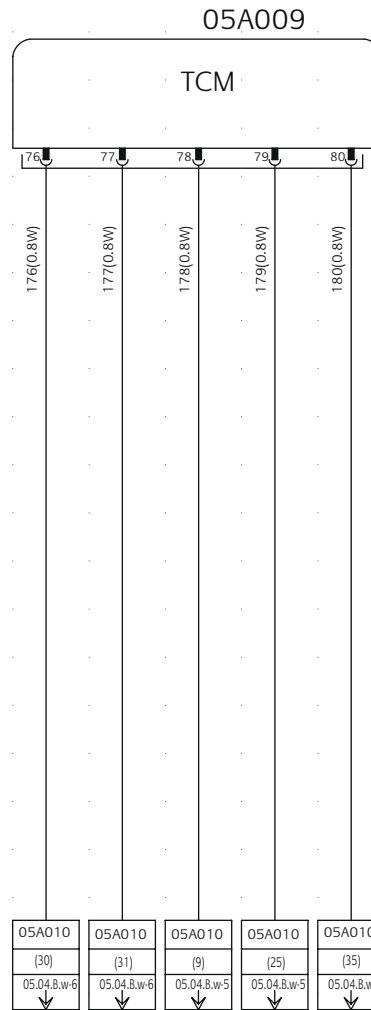
TCM



KL 31  
 KL 58  
 KL 30  
 KL 15

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
05A009	12	Agn Otomatik Şanziman Kumanda Cihazı, Allison	Allison Agn Automatic Transmission Control Unit	Unidad de Control de Transmisión Automática Allison Agn	Transmission Automatique Voith Allison Agn	Unita' Di Controllo Trasmissione Automatica Allison Agn
05A010		Agn Otomatik Şanziman, Allison	Allison Agn Automatic Transmission	Transmisión Automática Allison Agn	Boîte De Vitesses Automatique Allison Agn	Trasmissione Automatica Allison Agn



KL 31

KL 58

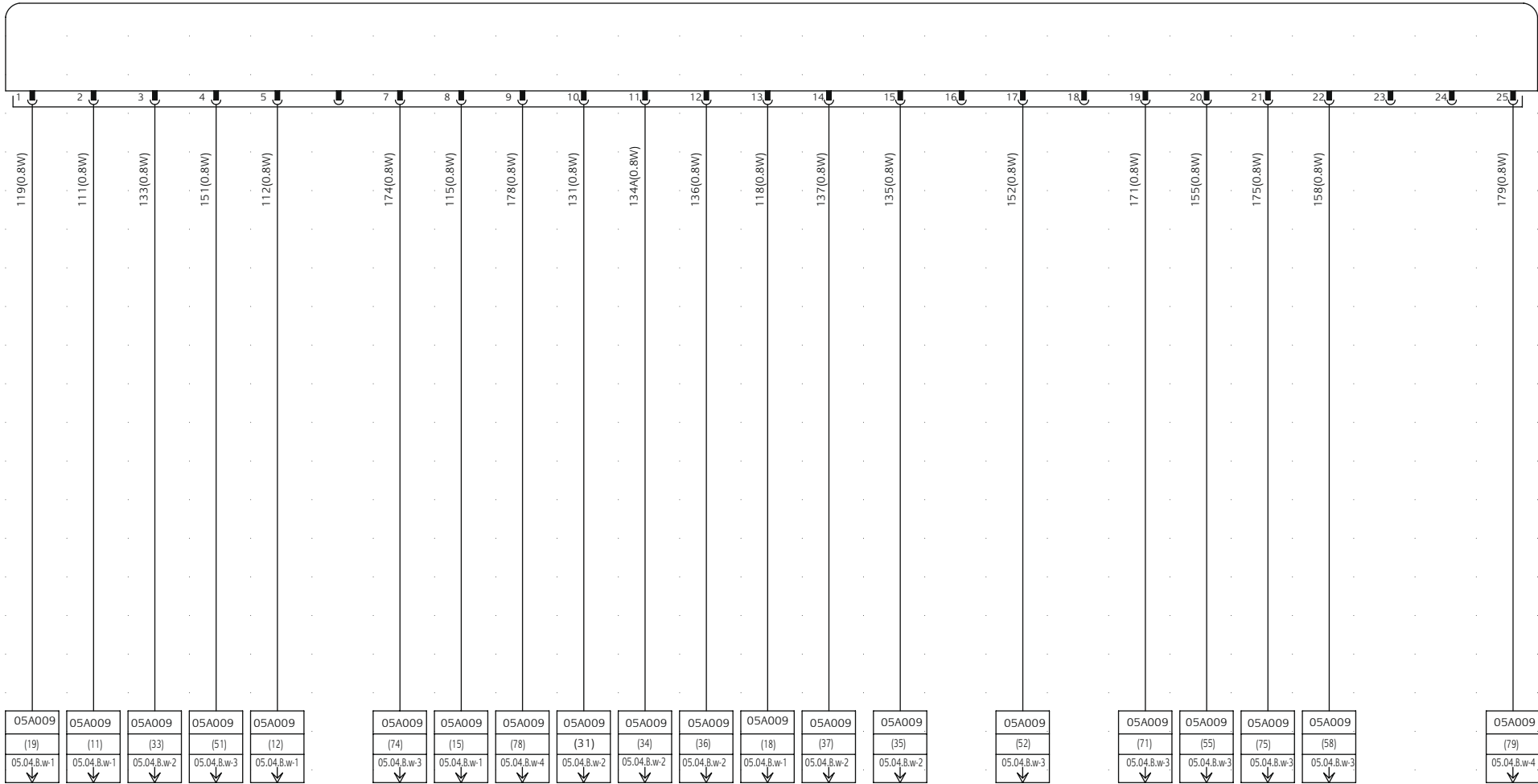
KL 30

KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
05A010	12	Agn Otomatik Şanziman, Allison	Allison Agn Automatic Transmission	Transmisión Automática Allison Agn	Boîte De Vitesses Automatique Agn Allison	Trasmissione Automatica Allison Agn
05A009	1-25	Agn Otomatik Şanziman Kumanda Cihazı, Allison	Allison Agn Automatic Transmission Control Unit	Unidad de Control de Transmisión Automática Allison Agn	Transmission Automatique Voith	Unita' Di Controllo Trasmissione Automatica Allison Agn

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

05A010



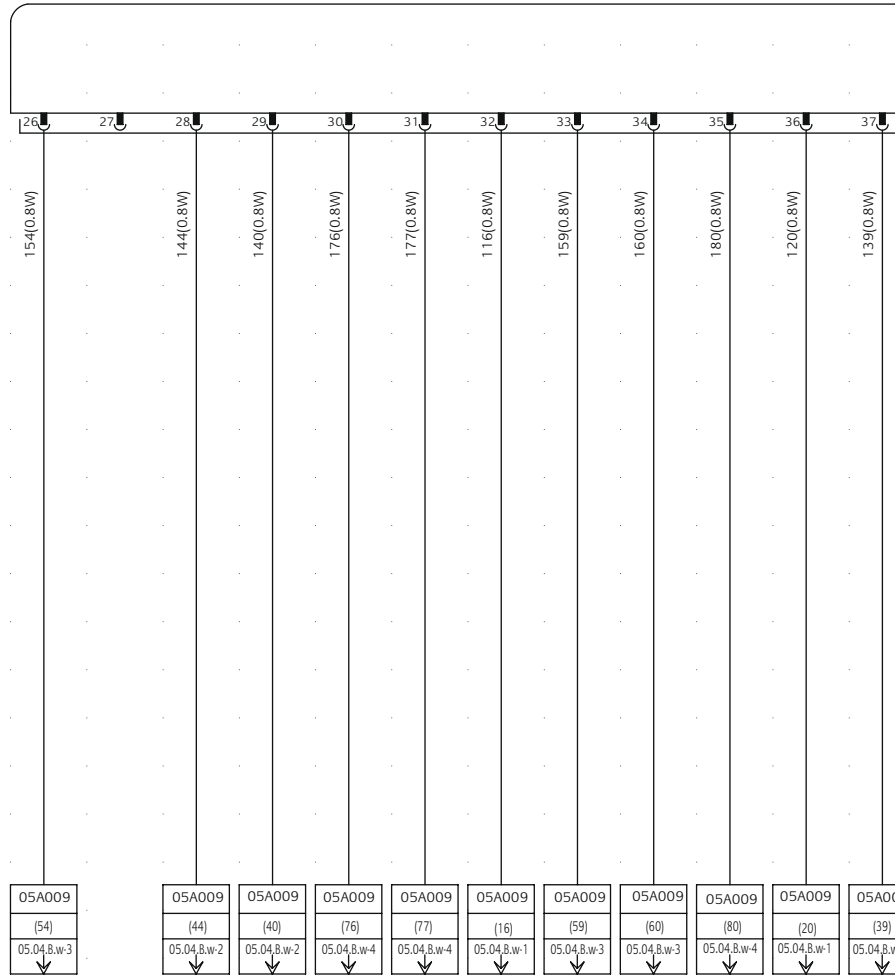
KL 31  
 KL 58  
 KL 30  
 KL 15

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
05A010	12	Agn Otomatik Şanziman, Allison	Allison Agn Automatic Transmission	Transmisión Automática Allison Agn	Boîte De Vitesses Automatique Agn Allison	Trasmissione Automatica Allison Agn
05A009	8-19	Agn Otomatik Şanziman Kumanda Cihazı, Allison	Allison Agn Automatic Transmission Control Unit	Unidad de Control de Transmisión Automática Allison Agn	Transmission Automatique Voith	Unita' Di Controllo Trasmissione Automatica Allison Agn



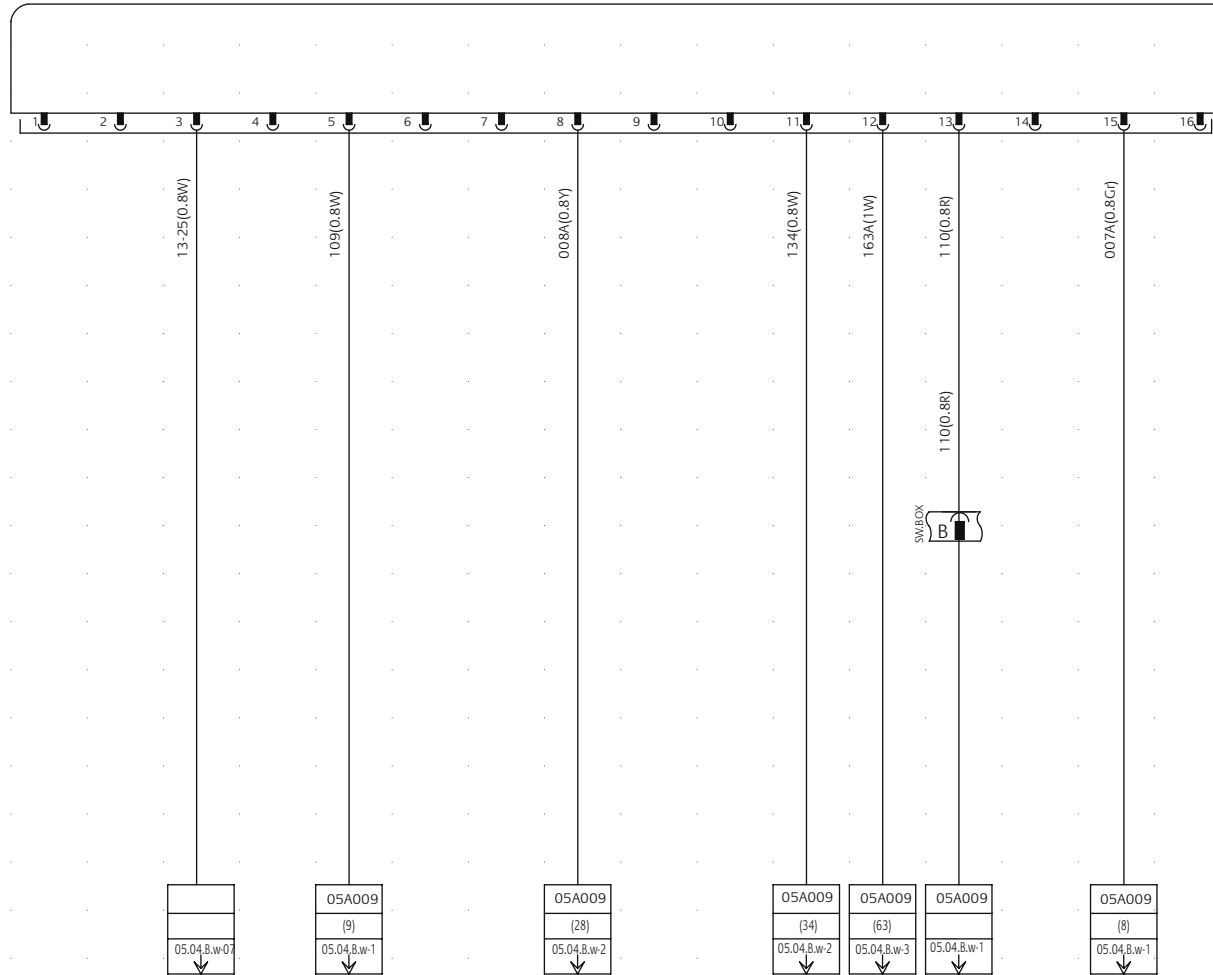
05A010



KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
05S004	12	Şanzıman Vites Seçim Şalteri (Voith / Zf Allison)	Shift Selector (Voith / Zf / Allison)	Selector de Cambios (Voith / ZF / Allison)	Selecteur De Vitesses (Voith / Zf / Allison)	Selettore Cambio (Voith / Zf / Allison)
05A009	9,12....	Agn Otomatik Şanzıman Kumanda Cihazı, Allison	Allison Agn Automatic Transmission Control Unit	Unidad de Control de Transmisión Automática Allison Agn	Transmission Automatique Voith Allison	Unita' Di Controllo Trasmissione Automatica Allison Agn

05S004

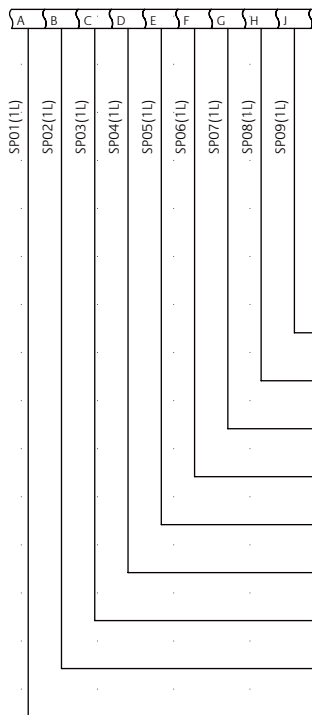


KL 31  
 KL 58  
 KL 30  
 KL 15

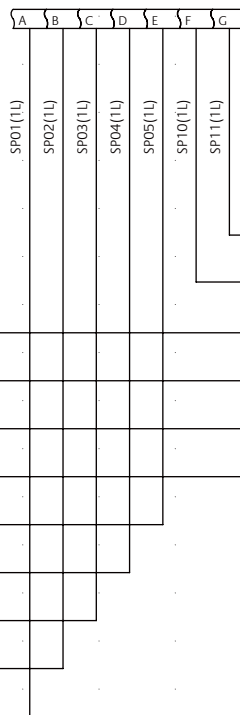
Code	Part No	Türkçe	English	Spanish	Français	Italiano
05A010	12	Agn Otomatik Şanziman, Allison	Allison Agn Automatic Transmission	Transmisión Automática Allison Agn	Boîte De Vitesses Automatique Agn Allison	Trasmissione Automatica Allison Agn
05A009	9,12....	Agn Otomatik Şanziman Kumanda Cihazı, Allison	Allison Agn Automatic Transmission Control Unit	Unidad de Control de Transmisión Automática Allison Agn	Transmission Automatique Voith Allison	Unita' Di Controllo Trasmissione Automatica Allison Agn

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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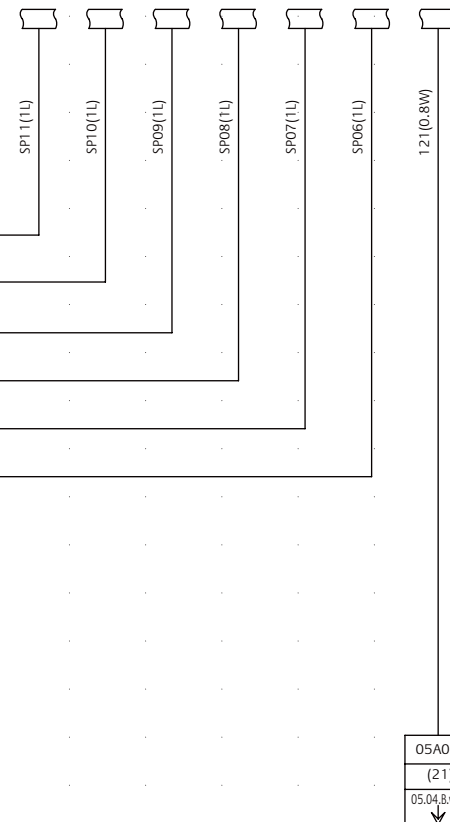
05A010 SPARE CONNECTOR



05A010 SPARE CONNECTOR



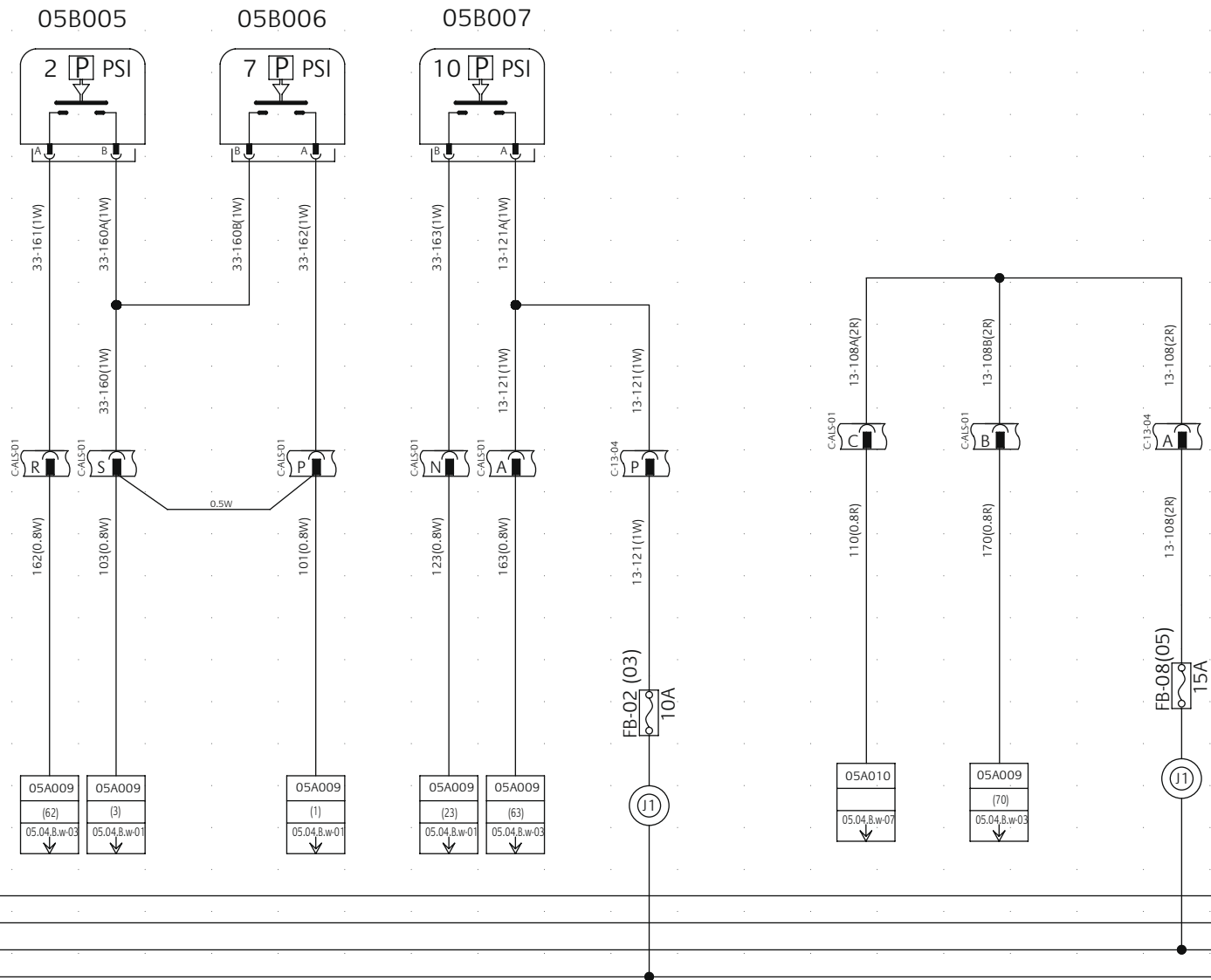
ALLISON  
SW. BOX SPARE CONNECTORS



KL 31  
KL 58  
KL 30  
KL 15

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Code	Part No	Türkçe	English	Spanish	Français	Italiano
05B005	12	Allison Basınç Sensörü 1	Allison Pressure Sensor 1	Sensor de Presión Allison 1	Capteur De Pression Allison 1	Sensore Pressione Allison 1
05B006	9,12....	Allison Basınç Sensörü 2	Allison Pressure Sensor 2	Sensor de Presión Allison 2	Capteur De Pression Allison 2	Sensore Pressione Allison 2
05B007	10,1	Allison Basınç Sensörü 3	Allison Pressure Sensor 3	Sensor de Presión Allison 3	Capteur De Pression Allison 3	Sensore Pressione Allison 3
05A009		Agn Otomatik Şanziman Kumanda Cihazı, Allison	Allison Agn Automatic Transmission Control Unit	Unidad de Control de Transmisión Automática Allison Agn	Transmission Automatique Voith	Unita' Di Controllo Trasmissione Automatica Allison Agn

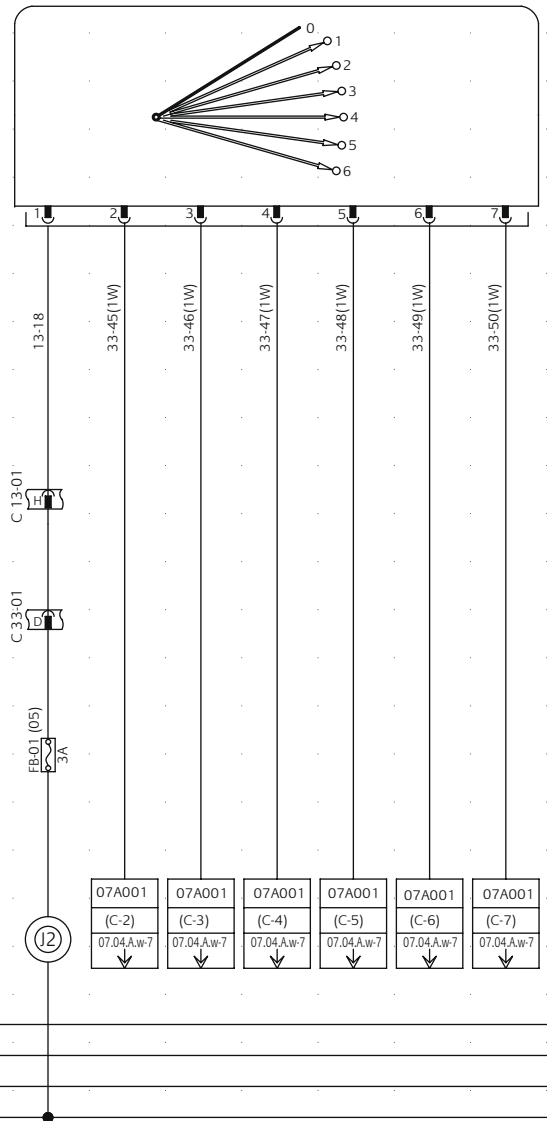


KL 31  
 KL 58  
 KL 30  
 KL 15





05S010



KL 31  
 KL 58  
 KL 30  
 KL 15

# Allison Transmissions Electrical System Diagnostic and Fault Codes

## 1- Diagnostic :

To display diagnostic codes using the display of a pushbutton shift selector, simultaneously press the UPSHIFT and DOWNSHIFT arrows on the selector. If an oil level sensor is present, fluid level is displayed first and the UPSHIFT and DOWNSHIFT arrows must be pressed simultaneously a second time to access the diagnostic code readout. The display for each code repeats continuously until the next code (if present) is accessed by depressing the MODE button. The following example illustrates the display cycle for the newest code in memory (code P2534 used for illustration purposes):

d1 Code list position (Note: d1=newest code, d5=oldest code in memory)

P Code type

25 Main code

34 Subcode

d1; P; 25; 34 Code repeats until next code (d2) is accessed by depressing the MODE button

If the condition which generated the code is active, the LED indicator on the selector will be illuminated simultaneously with the display of the code. If the condition which generated the code no longer exists, the LED is not illuminated and the code is maintained only as a historical record of the prior condition.

Any of the following methods may be used to exit the diagnostic display mode:

1. With pushbutton shift selectors: Simultaneously depress the UPSHIFT and DOWNSHIFT arrows or press any range button, D, N, or R. If the shift is not inhibited by an active code, the TCM will command the transmission to shift to the selected range.
2. Wait until timeout (approximately ten minutes). The system will automatically return to the normal operating mode.
3. Turn off the vehicle engine with the ignition switch, which turns off power to the TCM.

## 2- Fault Code :Page-1

C1312	Retarder Request Sensor Failed Low
C1313	Retarder Request Sensor Failed High
P0122	Pedal Position Sensor Circuit Low Voltage
P0123	Pedal Position Sensor Circuit High Voltage
P0218	Transmission Fluid Overtemperature
P0561	System Voltage Performance
P0562	System Voltage Low
P0563	System Voltage High
P0602	TCM Not Programmed
P0610	TCM Vehicle Options Error (Trans ID)
P0613	TCM Processor
P0614	Torque Control Mismatch (ECM/TCM)
P0634	TCM Internal Temperature Too High
P063E	Auto Configuration Throttle Input Not Present
P063F	Auto Configuration Engine Coolant Temp Input Not Present
P0658	Actuator Supply Voltage 1 Low (HSD 1 open/gnd)
P0659	Actuator Supply Voltage 1 High (HSD 1 batt)
P0701	Transmission Control System Performance
P0702	Transmission Control System Electrical (Trans ID)
P0703	Brake Switch Circuit
P0708	Transmission Range Sensor Circuit - High Input
P070C	Transmission Fluid Level Sensor Circuit - Low Input
P070D	Transmission Fluid Level Sensor Circuit - High Input
P0711	Transm. Fluid Temperature Sensor Circuit Performance
P0712	Transmission Fluid Temperature Sensor Circuit Low Input
P0713	Transmission Fluid Temperature Sensor Circuit High Input
P0716	Turbine Speed Sensor Circuit Performance
P0717	Turbine Speed Sensor Circuit No Signal (rapid decel)
P071A	Transmission Mode Switch "A" Circuit

P071D	Transmission Mode Switch "B" Circuit
P0721	Output Speed Sensor Circuit Performance
P0722	Output Speed Sensor Circuit No Signal (rapid decel)
P0726	Engine Speed Input Circuit Performance
P0727	Engine Speed Input Circuit No Signal (rapid decel)
P0729	Incorrect 6th Gear Ratio
P0730	Incorrect Neutral Gear Ratio
P0731	Incorrect 1st Gear Ratio
P0732	Incorrect 2nd Gear Ratio
P0733	Incorrect 3rd Gear Ratio
P0734	Incorrect 4th Gear Ratio
P0735	Incorrect 5th Gear Ratio
P0736	Incorrect Reverse Ratio
P0741	Torque Converter Clutch System Stuck Off
P0776	PCS 2 Controlled Clutch Stuck Off
P0777	PCS 2 Controlled Clutch Stuck On
P0796	PCS 3 Controlled Clutch Stuck Off
P0797	PCS 3 Controlled Clutch Stuck On
P0842	Transmission Pressure Switch 1 Circuit Low
P0843	Transmission Pressure Switch 1 Circuit High
P0880	TCM Power Input Signal
P0881	TCM Power Input Signal Performance
P0882	TCM Power Input Signal Low
P0883	TCM Power Input Signal High
P0894	Transmission Component Slipping
P0960	Pressure Control Solenoid (PCS) MM Control Circuit Open
P0960	Pressure Control Solenoid (PCS) MM System Performance
P0962	Pressure Control Solenoid (PCS) MM Control Circuit Low
P0963	Pressure Control Solenoid (PCS) MM Control Circuit High

## 2- Fault Code :Page-2

P0964	Pressure Control Solenoid (PCS) 2 System Open
P0965	Pressure Control Solenoid (PCS) 2 System Performance
P0966	Pressure Control Solenoid (PCS) 2 Control Circuit Low
P0967	Pressure Control Solenoid (PCS) 2 Control Circuit High
P0968	Pressure Control Solenoid (PCS) 3 System Open
P0969	Pressure Control Solenoid (PCS) 3 System Performance
P0970	Pressure Control Solenoid (PCS) 3 Control Circuit Low
P0971	Pressure Control Solenoid (PCS) 3 Control Circuit High
P0972	Shift Solenoid (SS) 1 Control Circuit Open
P0973	Shift Solenoid (SS) 1 Control Circuit Low
P0974	Shift Solenoid (SS) 1 Control Circuit High
P0975	Shift Solenoid (SS) 2 Control Circuit Open
P0976	Shift Solenoid (SS) 2 Control Circuit Low
P0977	Shift Solenoid (SS) 2 Control Circuit High
P0989	Retarder Pressure Sensor Failed Low
P0990	Retarder Pressure Sensor Failed High
P1739	Incorrect Low Gear Ratio
P1891	Throttle Position Sensor PWM Signal Low Input
P1892	Throttle Position Sensor PWM Signal High Input
P2184	Engine Coolant Temperature Sensor 2 Circuit Low
P2185	Engine Coolant Temperature Sensor 2 Circuit High
P2637	Torque Management Feedback Signal "A"
P2641	Torque Management Feedback Signal "B"
P2670	Actuator Supply Voltage 2 Low (HSD 2 gnd)
P2671	Actuator Supply Voltage 2 High (HSD 2 batt/open)
P2685	Actuator Supply Voltage 3 Low (HSD 3 gnd)
P2686	Actuator Supply Voltage 3 High (HSD 3 batt/open)
P2714	PCS 4 Controlled Clutch Stuck Off
P2715	PCS 4 Controlled Clutch Stuck On

P2718	Pressure Control Solenoid (PCS) 4 System Open
P2719	Pressure Control Solenoid (PCS) 4 System Performance
P2720	Pressure Control Solenoid (PCS) 4 Control Circuit Low
P2721	Pressure Control Solenoid (PCS) 4 Control Circuit High
P2723	PCS 1 Controlled Clutch Stuck Off
P2724	PCS 1 Controlled Clutch Stuck On
P2727	Pressure Control Solenoid (PCS) 1 System Open
P2728	Pressure Control Solenoid (PCS) 1 System Performance
P2729	Pressure Control Solenoid (PCS) 1 Control Circuit Low
P2730	Pressure Control Solenoid (PCS) 1 Control Circuit High
P2736	Pressure Control Solenoid (PCS) 5 System Open
P2737	Pressure Control Solenoid (PCS) 5 System Performance
P2738	Pressure Control Solenoid (PCS) 5 Control Circuit Low
P2739	Pressure Control Solenoid (PCS) 5 Control Circuit High
P2740	Retarder Oil Temperature Hot
P2742	Retarder Oil Temperature Sensor Circuit - Low Input
P2743	Retarder Oil Temperature Sensor Circuit - High Input
P2761	TCC PCS Control Circuit Open
P2762	TCC PCS Control Circuit Range / Performance
P2763	TCC PCS Control Circuit High
P2764	TCC PCS Control Circuit Low
P278A	Kickdown Input Switch Circuit
P2793	Gear Shift Direction Circuit
P2808	PCS 6 Controlled Clutch Stuck Off
P2809	PCS 6 Controlled Clutch Stuck On
P2812	Pressure Control Solenoid (PCS) 6 System Open
P2813	Pressure Control Solenoid (PCS) 6 System Performance
P2814	Pressure Control Solenoid (PCS) 6 Control Circuit Low
P2815	Pressure Control Solenoid (PCS) 6 Control Circuit High

2- Fault Code :Page-3

U0001	High Speed CAN Communication Bus
U0010	Medium Speed CAN Communication Bus
U0100	Lost Communication with ECM / PCM "A"
U0103	Gear Shift Module 1 State of Health
U0115	Lost Communication with ECM / PCM "B"
U0291	Gear Shift Module 2 State of Health
U0304	Software Incompatibility with Gear Shift Control Module 1
U0333	Software Incompatibility with Gear Shift Control Module 2
U0404	Gear Shift Module 1 Invalid Data
U0592	Gear Shift Module 2 Invalid Data



# 06

# MULTIPLEX SYSTEM

## Locations

ZR32 & MUX 1.1..... 06.04.A.I-1

## Wiring Diagram

ZR32-A..... 06.04.A.w-1

MUX1.1..... 06.04.B.w-1

MUX1.2..... 06.04.C.w-1

MUX1.3..... 06.04.D.w-1

MUX2.1..... 06.04.E.w-1

## Pin Description Lists

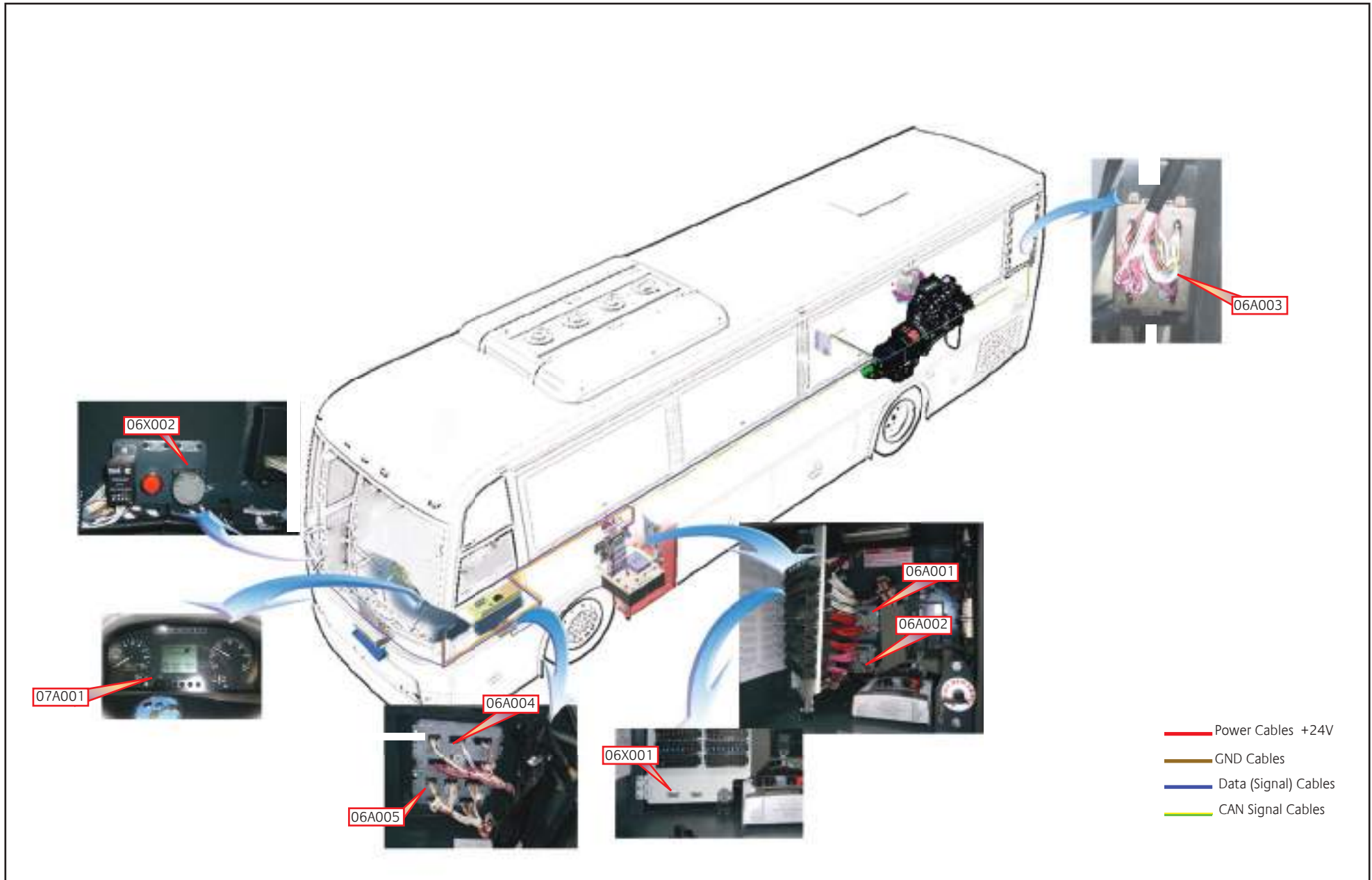
ZR32-A ..... 06.04.A.List

MUX1.1 ..... 06.04.B.List

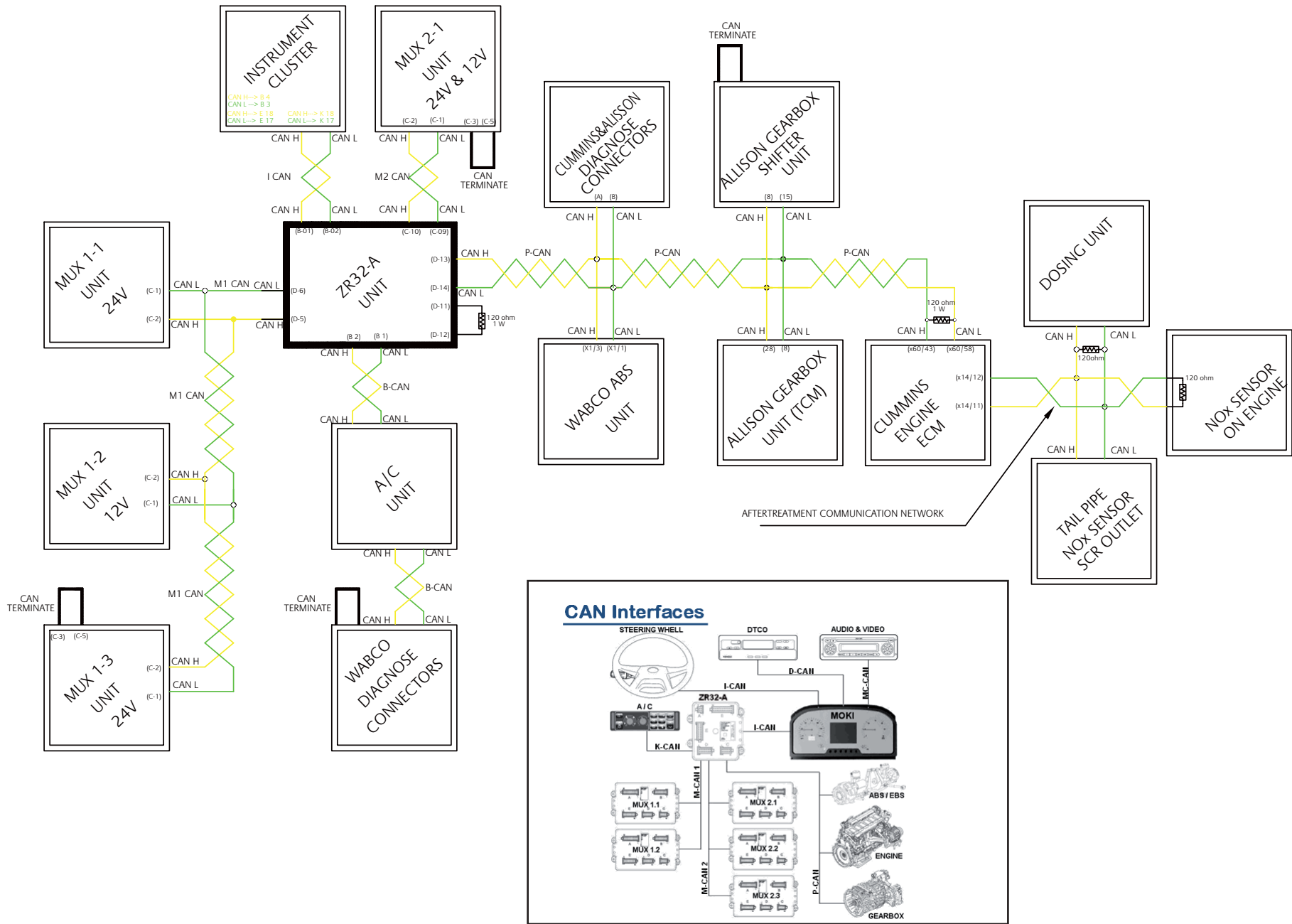
MUX1.2..... 06.04.C.List

MUX1.3..... 06.04.D.List

MUX2.1..... 06.04.E.List

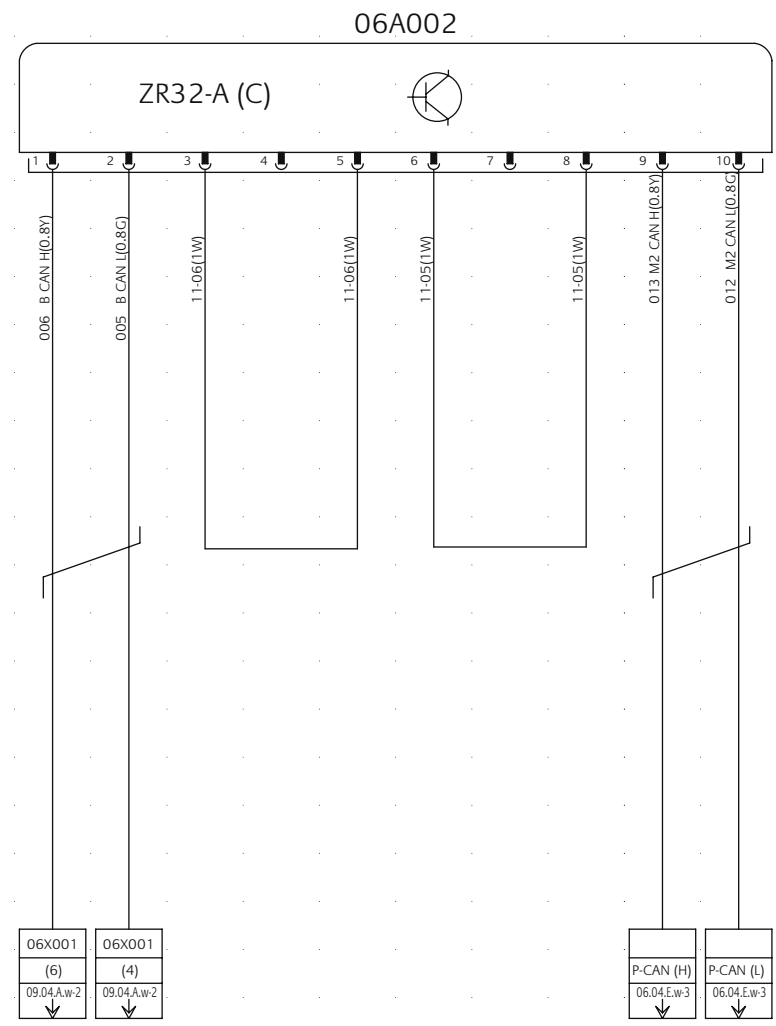
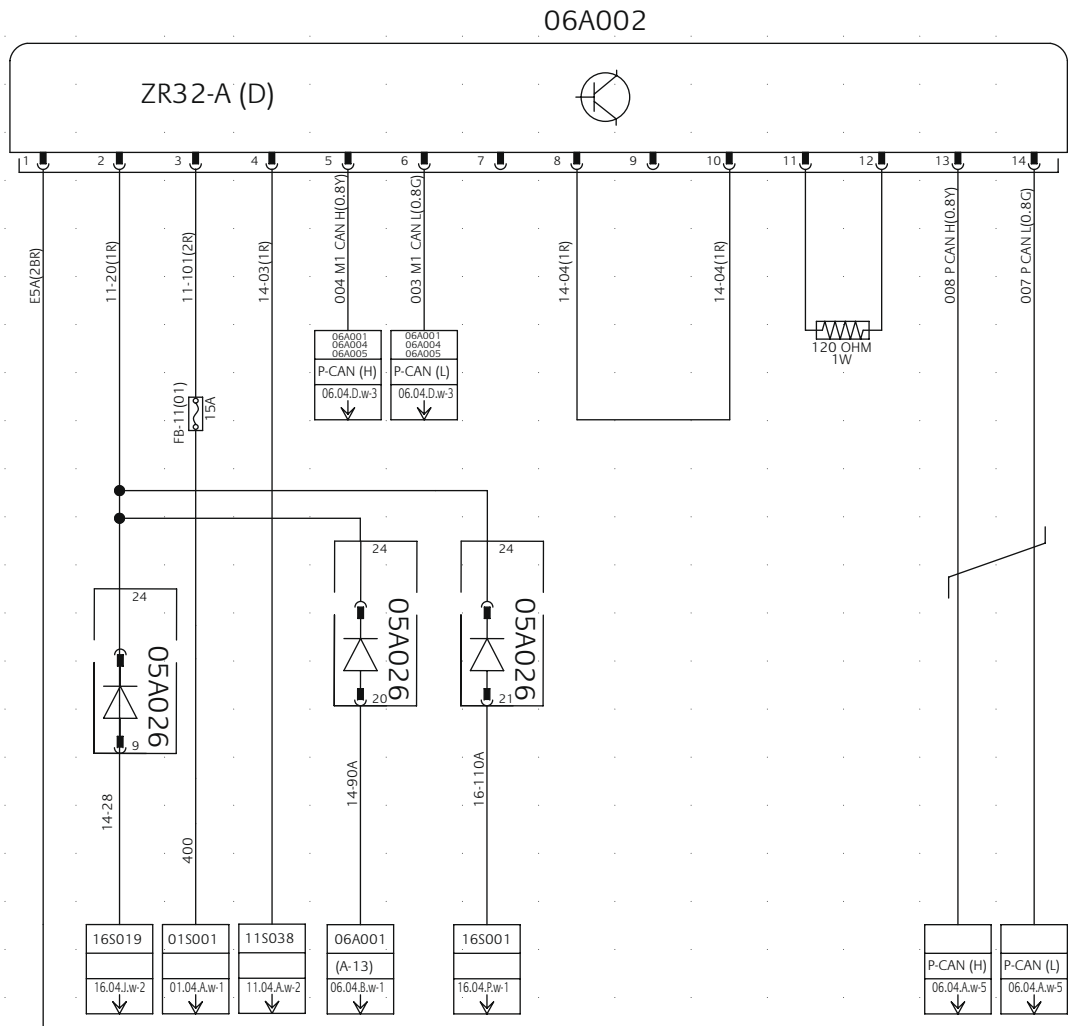








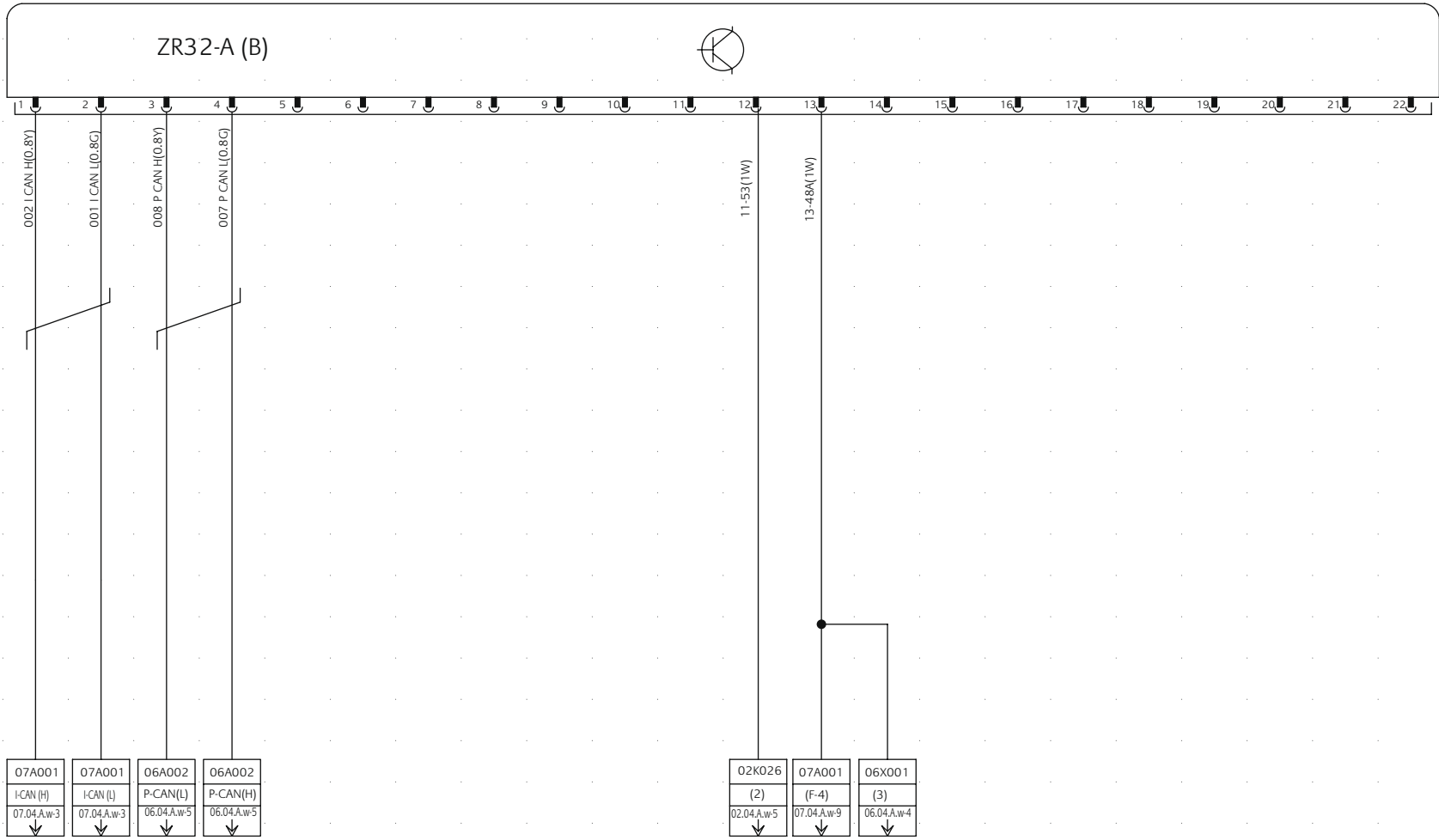
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A002	12	Zr 32-A	Zr 32-A	Zr 32-A	Zr 32-A	Zr 32-A
06X001		J1939/J1587 Can Ariza Teşhis Prizi	Can J1939/J1587 Diagnostic Socket	Toma de Conexión para Herramientas de Diagnóstico del Cuadro de Mandos J1939/J1587	Prise Diagnostic Can J1939/J1587	Presa Diagnostica Can J1939/J1587

06A002

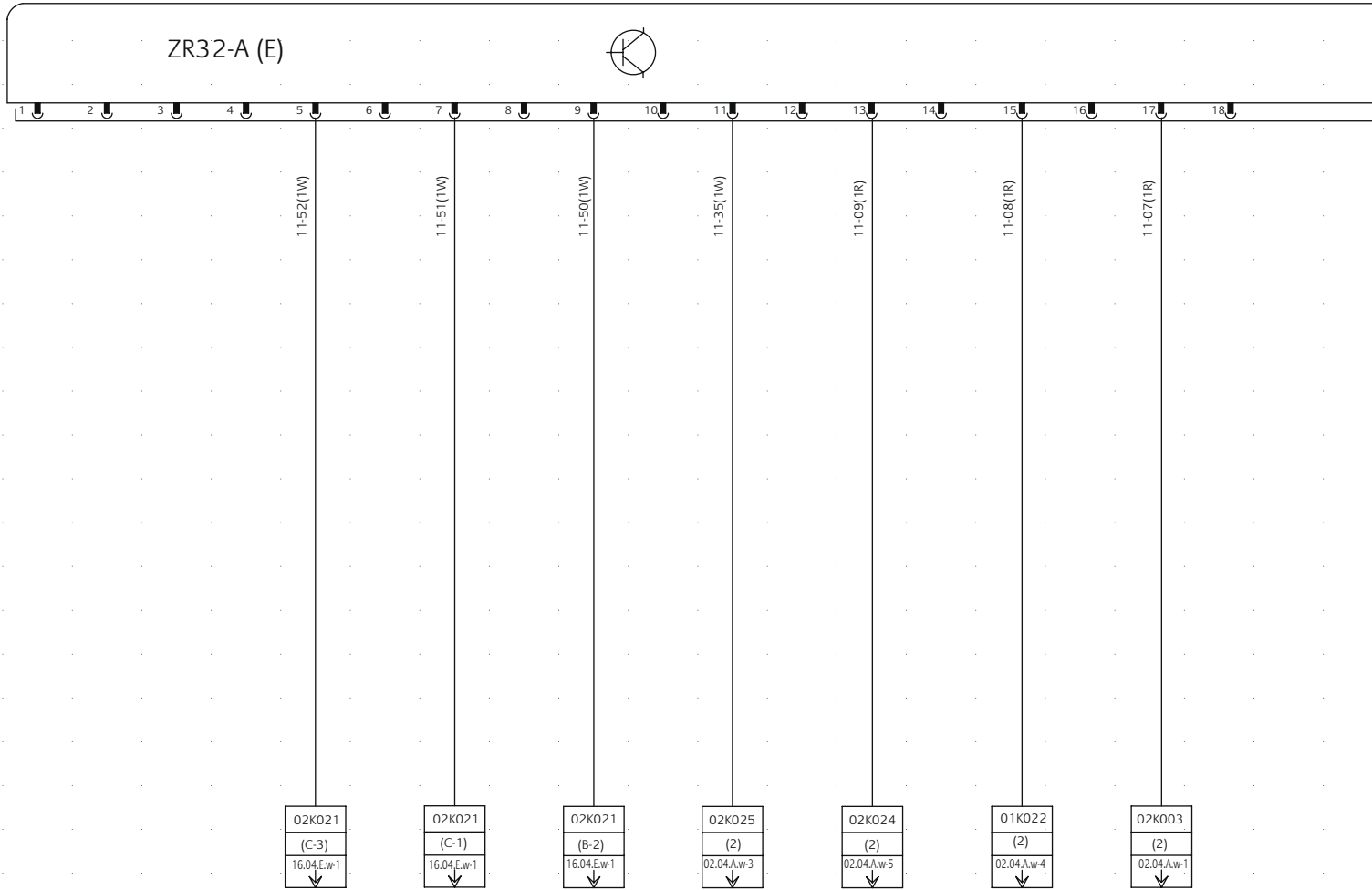


KL 31  
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Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A002	12	Zr 32-A	Zr 32-A	Zr 32-A	Zr 32-A	Zr 32-A
02K026	4	KL-30 Aktif Etme Rölesi	KL-30 PULL RELAY	00000	00000	00000
02K021	6,8,10	Flaşör Rölesi (Kapı Açık)	Flasher Relay (Door Open)	Relé del Intermitente (Puerta abierta)	Relais clignotant (Portière ouverte)	Relè Lampeggiatore (Porta Aperta)
02K025	11	Acildurum Stop Rölesi (12V Sistem İçin)	Emergency Stop Relay (With 12V System)	00000	00000	00000
02K024	13	KL-30 Reaktif Etme Rölesi	KL-30 DROP RELAY	00000	00000	00000
02K016	15	Acil Durum Rölesi (Yan İz Lambaları)	Emergency Stop Lamps Relay (Side Lamps)	Relé de Luces de Parada de emergencia (Luces laterales)	Relais des feux d'arrêt d'urgence (feux latéraux)	Relè luci arresto di emergenza (Luci di posizione)
02K003	18	Acil Durum KI15 Kesme Rölesi	Emergency Stop KI15 Cut-Off Relay	Relés de Corte KI15 de Parada de Emergencia	Relais De Coupure KI15 D'Arret D'Urgence	Relè' Di Arresto Per Arresto Di Emergenza KI15

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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06A002

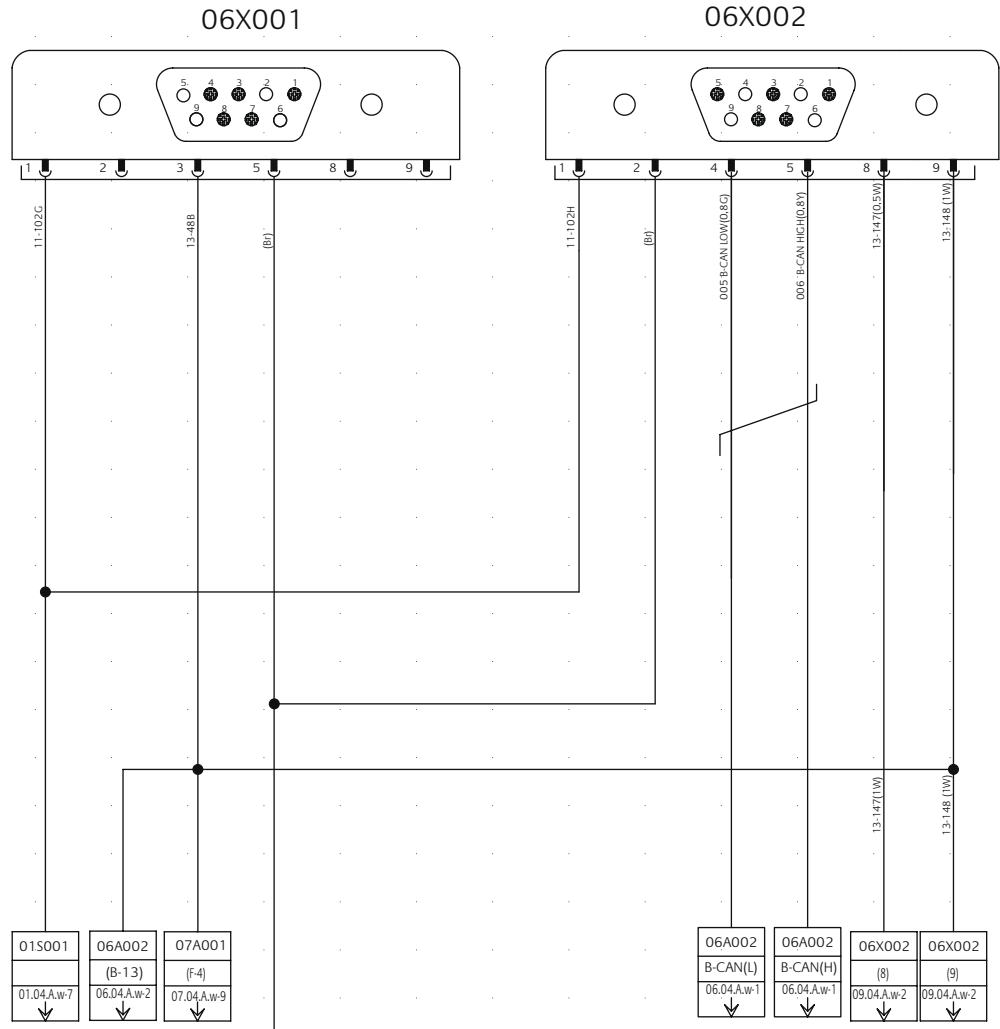


KL 31	
KL 58	
KL 30	
KL 15	

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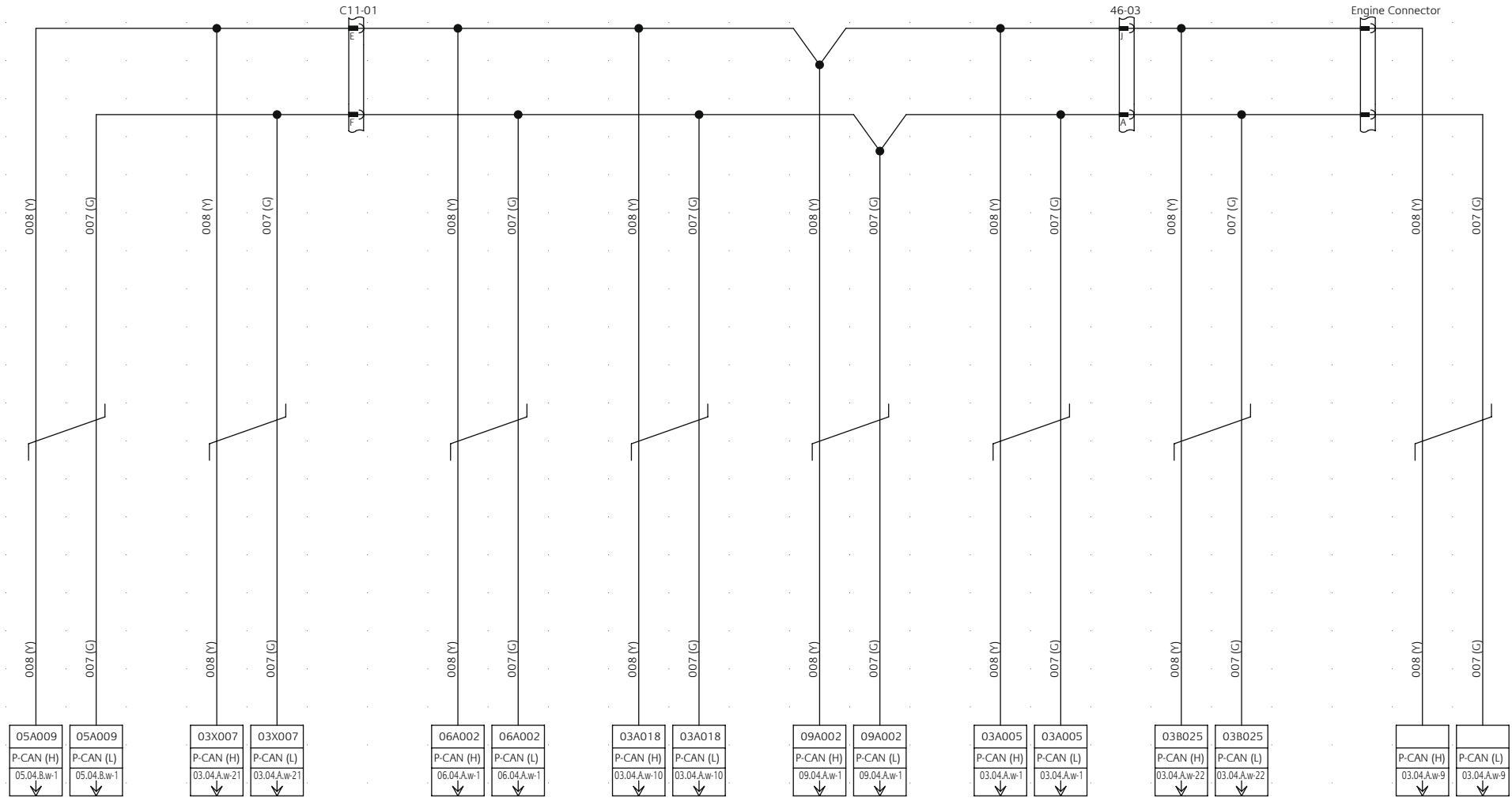






KL 31  
 KL 58  
 KL 30  
 KL 15





KL 31

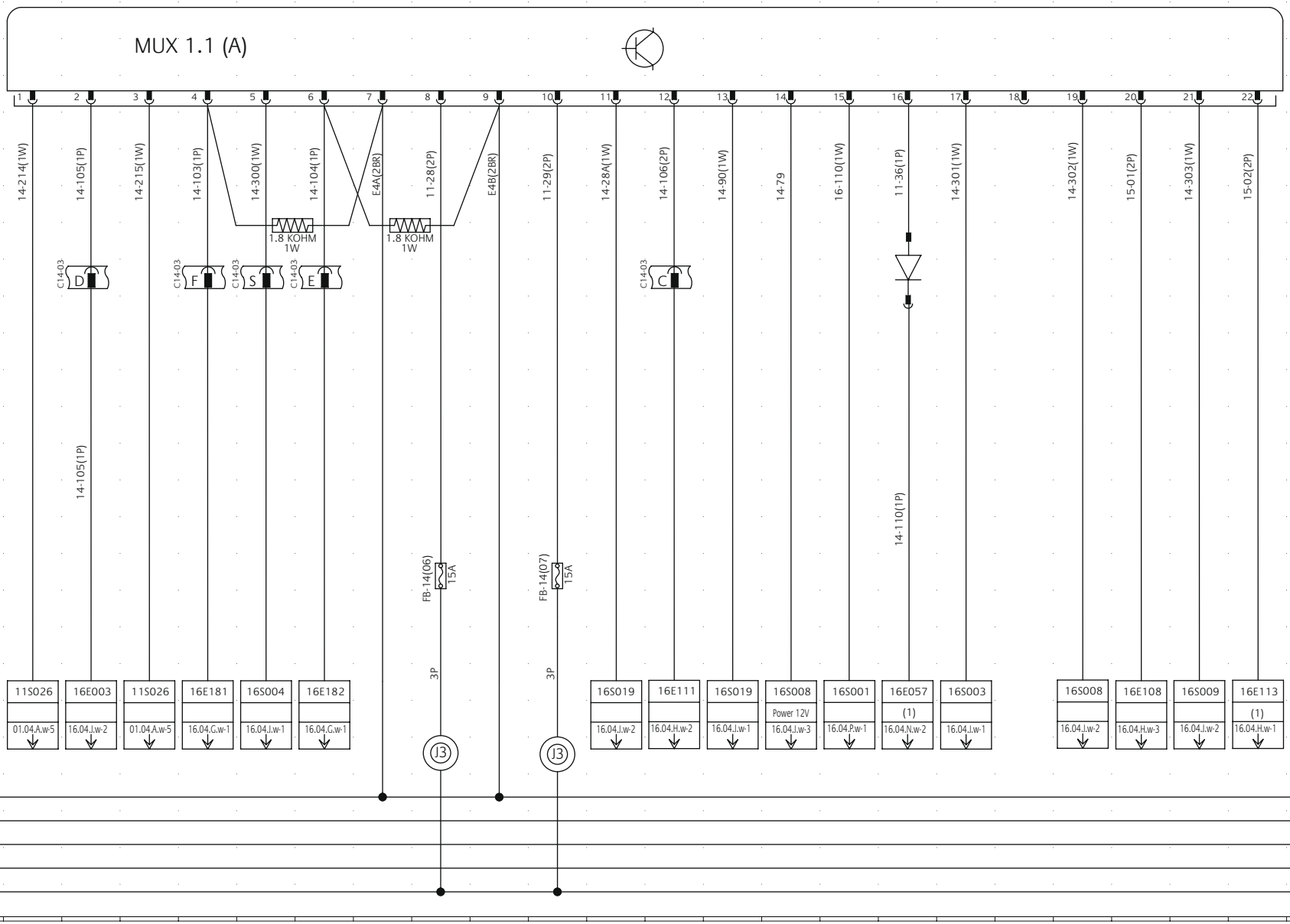
KL 58

KL 30

KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A001	12	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
11S026	2,4	Ön Kapi Açık/Kapalı Pozisyon Mikro Şalteri 2	Front Door Open/Close Position Micro Switch 2	Micro Switch de Posición de Puerta Delantera Abierta/Cerrada 2	Micro-Interrupteur Ouverture/Fermeture Portiere Avant 2	Microinterruttore Di Posizione Porta Anteriore Aperta/Chiusa 2
16E003	3	Arka Röle Paneli Aydınlatma Lambası	Rear Relay Panel Illumination Lamp	Lámpara de Iluminación del Panel de Relés Trasero	Lampe D'Eclairage Du Panneau De Relais Arriere	Segnale Illuminazione Pannello Rele' Posteriore
16E181	5	Geri Vites Lambası, Ön Sağ Yan	Back Up Light, Front Right Side	Luz de Marcha Atrás, Lateral Delantero Derecho	Feu De Recul, Avant Droit	Luce Di Backup, Lato Destro Anteriore
16S004	6	Bagaj Bölmesi Kapısı Şalteri (Sağ 2)	Luggage Compartment Door Switch (Right 2)	Interruptor de Puerta del Maletero (Derecha 2)	Contacteur Porte De Compartiment À Bagages	Interruttore Portello Compartimento Bagagli (Destra 2)
16E182	7	Geri Vites Lambası, Ön Sol Yan	Back Up Light, Front Left Side	Luz de Marcha Atrás, Lateral Delantero Izquierdo	Feu De Recul, Avant Gauche	Luce Di Backup, Lato Sinistro Anteriore
16S019	12	Ön Röle Paneli Aydınlatma Lambası Şalteri	Front Relay Panel Illumination Lamp Switch	Interruptor de Lámparas de Iluminación del Panel de Relés Delantero	Contacteur De La Lampe D'Eclairage Du Panneau De Relais Avant	Interruttore Segnale Illuminazione Pannello Rele' Anteriore
16E111	13	Yan İşaret Lambası 5 (Sağ)	Side Marker Lamp 5 (Right)	Luz Lateral de Posición 5 (Derecha)	Feu De Gabarit 5 (Droit)	Segnalatore Laterale 5 (Destra)
16S019	14	Ön Röle Paneli Aydınlatma Lambası Şalteri	Front Relay Panel Illumination Lamp Switch	Interruptor de Lámparas de Iluminación del Panel de Relés Delantero	Contacteur De La Lampe D'Eclairage Du Panneau De Relais Avant	Interruttore Segnale Illuminazione Pannello Rele' Anteriore
16S001	16	Arka Röle Paneli Aydınlatma Lambası Şalteri	Rear Fuse Room Illumination Lamp Switch	Interruptor de la Lámpara de Iluminación del Panel de Relés Trasero	Contacteur De La Lampe D'Eclairage Du Panneau De Relais Arriere	Interruttore Segnale Illuminazione Pannello Rele' Posteriore
16E057	17	Koridor Aydınlatması 1	Aisle Illumination 1	Iluminación del Pasillo 1	Eclairage D'Allee 1	Illuminazione Corridoio 1
16S003	18	Bagaj Bölmesi Kapısı Şalteri (Sağ 1)	Luggage Compartment Door Switch (Right 1)	Interruptor de Puerta del Maletero (Derecha 1)	Contacteur Porte De Compartiment À Bagages	Interruttore Portello Compartimento Bagagli (Destra 1)
16S008	20	Bagaj Bölmesi Kapısı Şalteri (Sol 1)	Luggage Compartment Door Switch (Left 1)	Interruptor de Puerta del Maletero (Izquierda 1)	Contacteur Porte De Compartiment À Bagages	Interruttore Portello Compartimento Bagagli (Sinistra 1)
16E108	21,23	Yan İşaret Lambası 2 (Sağ)	Side Marker Lamp 2 (Right)	Luz Lateral de Posición 2 (Derecha)	Feu De Gabarit 2 (Droit)	Segnalatore Laterale 2 (Destra)
16S009	22	Bagaj Bölmesi Kapısı Şalteri (Sol 2)	Luggage Compartment Door Switch (Left 2)	Interruptor de Puerta del Maletero (Izquierda 2)	Contacteur Porte De Compartiment À Bagages	Interruttore Portello Compartimento Bagagli (Sinistra 2)

06A001

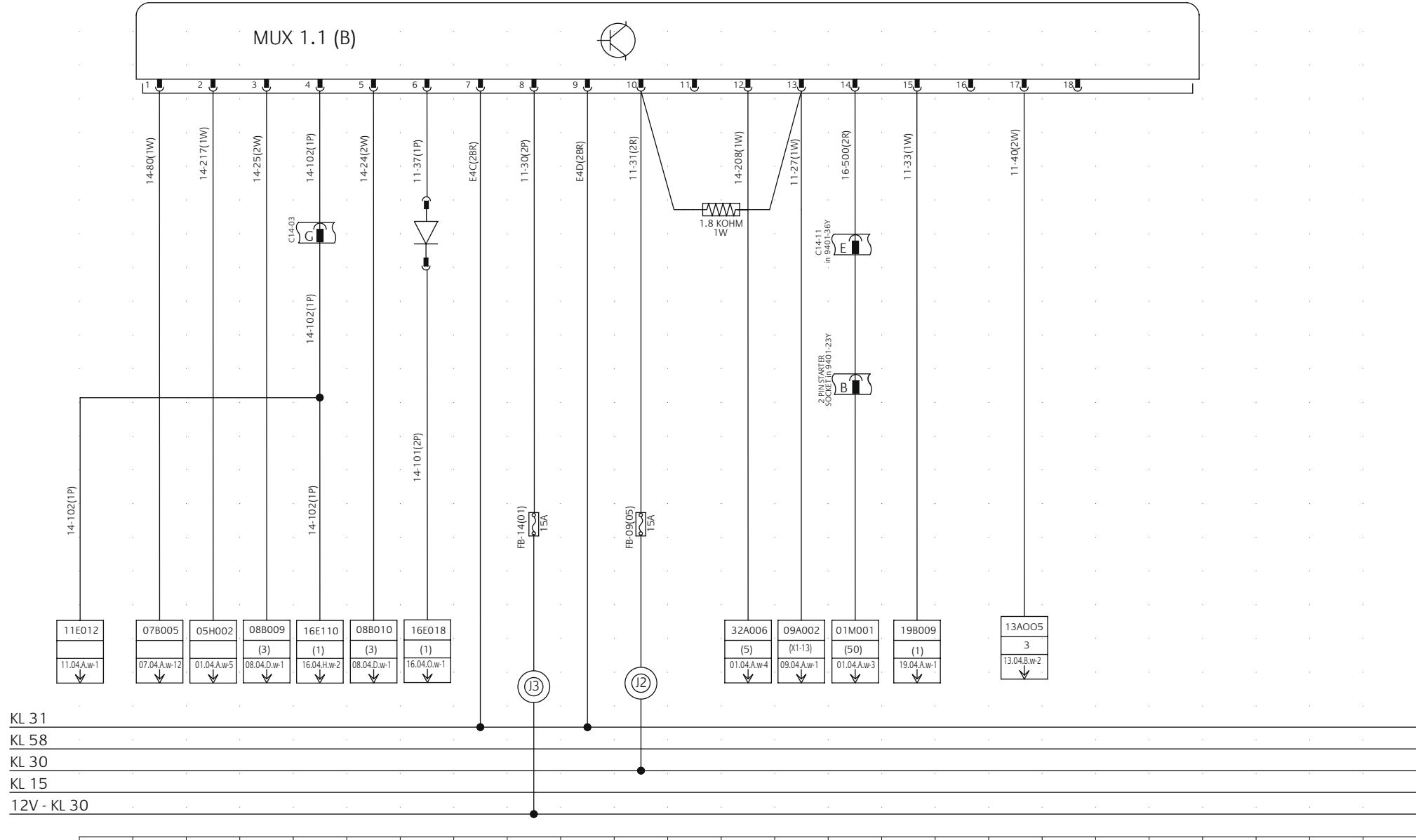


KL 31  
 KL 58  
 KL 30  
 KL 15  
 12V- KL 30

Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A001	11	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
07B005	2	Depodaki Yakıt Miktarı Sensörü	Fuel Level Sensor	Sensor de Nivel de Combustible	Capteur Réserve De Carburant	Sensore Livello Carburante
05H002	3	Allison Şanzıman Uyarı Lambası	Allison Transmission Warning Lamp	Luz de Advertencia de la Transmisión Allison	Voyant d'avertissement de la transmission Allison	Spia trasmissione Allison
16E110	5	Yan İşaret Lambası 4 (Sağ)	Side Marker Lamp 4 (Right)	Luz Lateral de Posición 4 (Derecha)	Feu De Gabarit 4 (Droit)	Segnalatore Laterale 4 (Destra)
16E018	6	Ön Kapi 1. Basamak Aydınlatma Lambası	Front Door Step 1 Illumination Lamp	Lámpara de Iluminación de Escalón 1 de Puerta Delantera	Lampe D'Eclairage Des Pas De La Porte Avant 1	Lampada Illuminazione Porta Frontale Passo 1
32A006	13	Engelliler Asansörü Tahrik Ünitesi	Handicapped Lift Drive Unit	Unidad de Tracción de Elevador para Minusválidos	Unité De Commande Ascenseur Pour Handicapés	Unità' Di Trazione Per Ascensore Per Disabili
09A002	13	Abs Kumanda Cihazı (Wabco)	Abs Electronic Control Module (Wabco)	Módulo de Control Electrónico de ABS (WABCO)	Calculateur Système Antiblocage Abs	Modulo Di Controllo Elettronica Abs (Wabco)
01M001	15	Marş Motoru	Starter	Motor de Arranque	Démarrreur	Starter
19B009	16	Yangın İkaz Sensörü (Ön Röle Paneli)	Fire Warning Sensor (Front Relay Panel)	Sensor de Alarma de Incendios (Panel de Relés Delantero)	Capteur D'Avertisseur De Feu (Panneau De Relais Avant)	Sensore Allarme Incendio (Pannelo Rele' Anteriore)

06A001

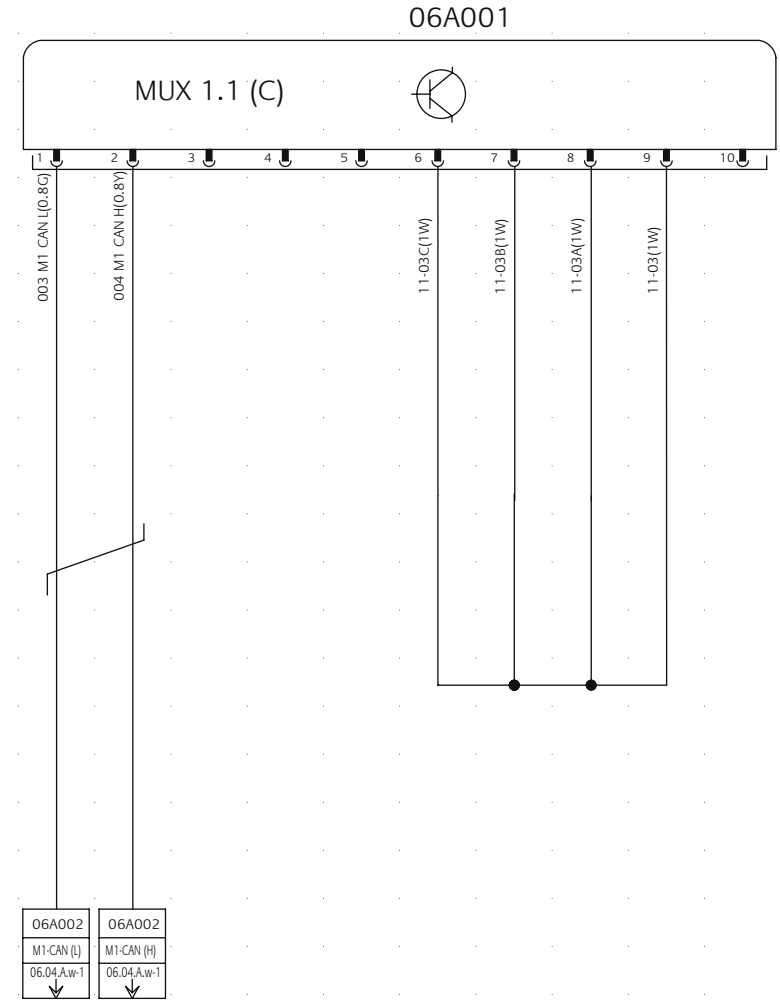
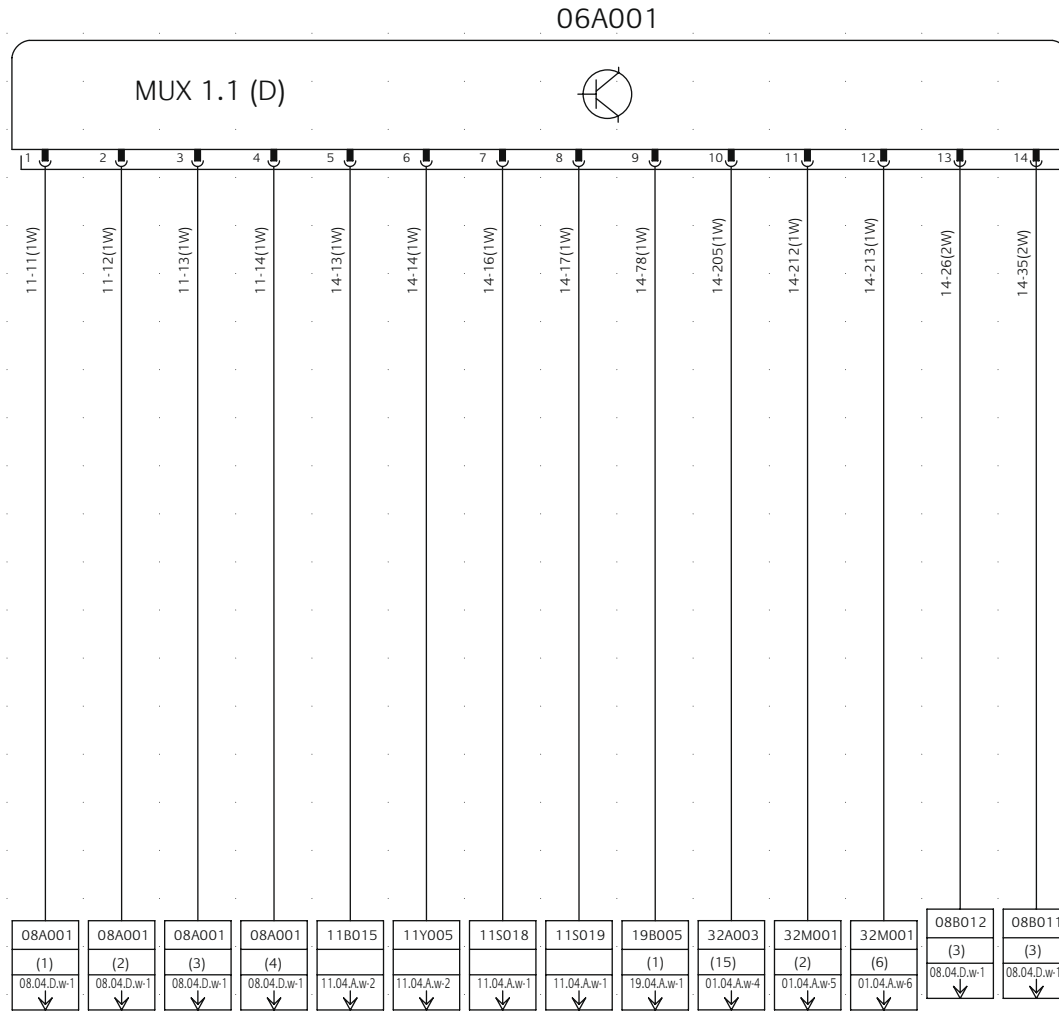
MUX 1.1 (B)



KL 31  
 KL 58  
 KL 30  
 KL 15  
 12V - KL 30

Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A001	11	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
08A001	1,2,3,4	Fren Balataşı Aşınma Kumanda Cihazı	Brake Pad Wear Control Module	Módulo de Control de Desgaste de las Pastillas de Freno	Calculateur Indicateur D'Usure Des Freins, Essieu Additionnel	Modulo Di Controllo Usura Pastiglie Freni
11B015	5,6	Ön Kapi Ana Basınç Sensörü	Front Door Main Pressure Switch	Interruptor Principal de Presión de Puerta Delantera	Commande Pression Principale Portiere Avant	Interruttore Pressione Principale Porta Frontale
11S018	7	Orta Kapi Açık/Kapali Pozisyon Mikro Şalteri	Middle Door Open/Close Position Micro Switch	Micro Switch de Posición de Puerta Central Abierta/Cerrada	Micro-Interrupteur Ouverture/Fermeture Portiere Centrale	Microinterruttore Di Posizione Porta Centrale Aperta/Chiusa
11S019	8	Orta Kapi Açık/Kapali Pozisyon Mikro Şalteri 2	Middle Door Open/Close Position Micro Switch 2	Micro Switch de Posición de Puerta Central Abierta/Cerrada 2	Micro-Interrupteur 2 Ouverture/Fermeture Portiere Centrale	Microinterruttore Di Posizione Porta Centrale Aperta/Chiusa 2
19B001	9	Yangın İkaz Sensörü (Orta Bagaj 1)	Fire Warning Sensor (Middle Luggage 1)	Sensor de Alarma de Incendios (Maletero Central 1)	Capteur D'Avertisseur De Feu (Soute Centrale 1)	Sensore Allarme Incendio (Portabagagli Centrale 1)
32A003	10	Engelliler Asansörü Kullanım Ünitesi	Handicapped Lift Operating Unit	Unidad Operativa del Elevador para Minusválidos	Unité De Commande Ascenceur Pour Handicapés	Unita' Di Attivazione Per Ascensore Per Disabili
32M001	11,12	Engelli Asansörü Güvenlik Kapi Kilitleme Motoru	Handicap Lift Safety Door Locking Motor	Motor de Bloqueo de Seguridad del Elevador para Minusválidos	Moteur De Verrouillage De La Portiere De Securite De L'Ascenseur Pour Personne Handicapee	Motore Blocco Porta Di Sicurezza Sollevamento Disabili





KL 31

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KL 58

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KL 30

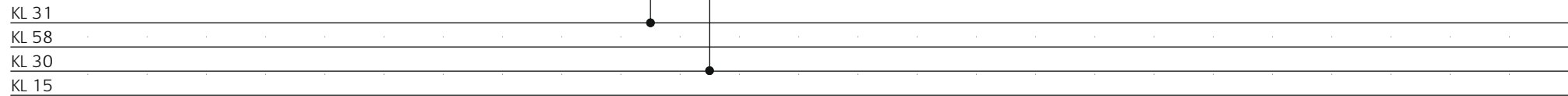
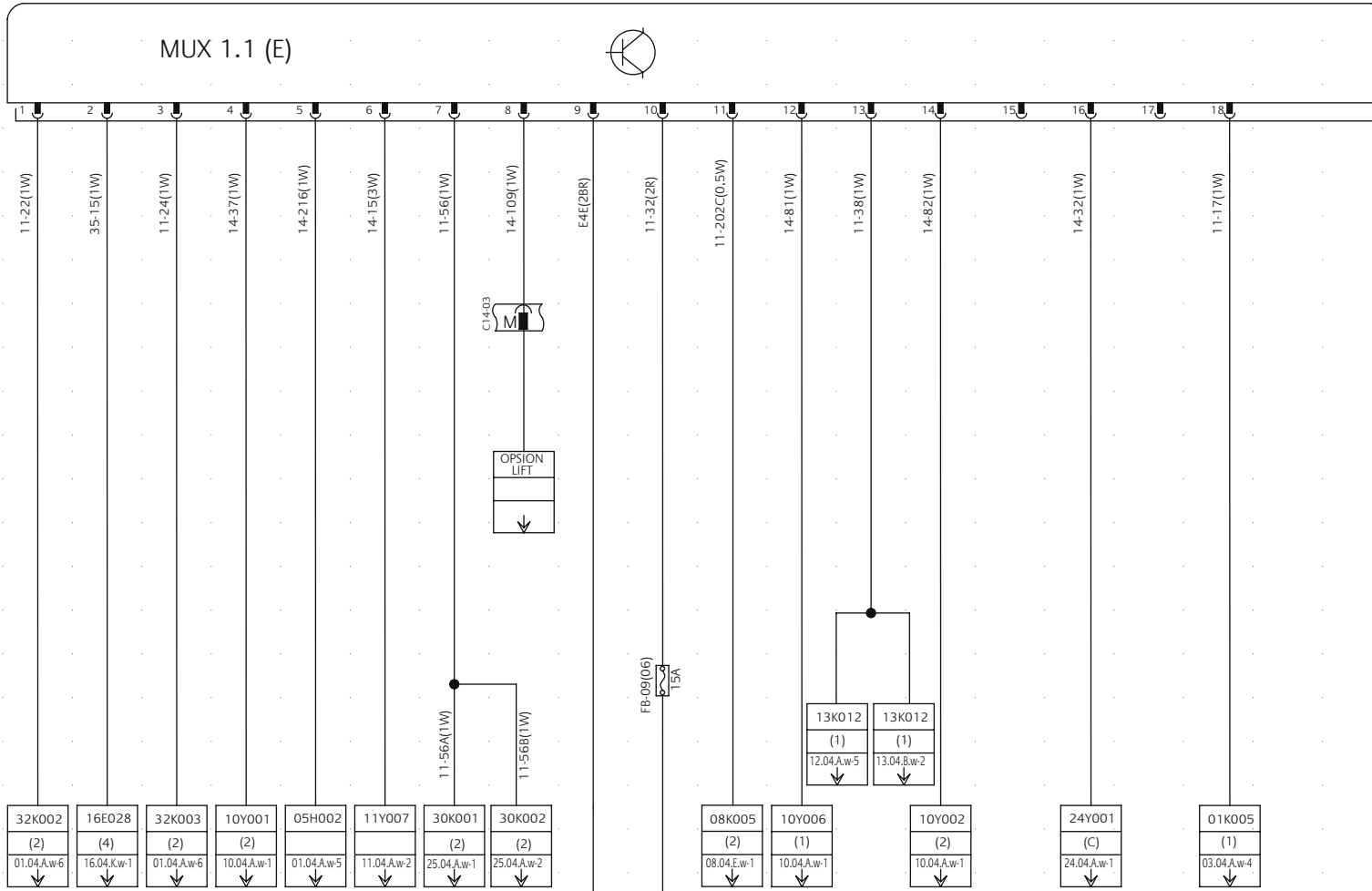
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KL 15

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Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A001	11	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
32K002	2	Engelliler Asansörü Kapisi Açık Bilgisi Rölesi	Handicapped Lift Door Relay (Door Open)	Relé de la Puerta del Elevador para Minusválidos (Puerta Abierta)	Relais Porte D'Ascenseur Pour Personne Handicapée (Portiere Ouverte)	Rele' Portello Ascensore Per Disabili (Portello Aperto)
16E028	3	Gece Aydınlatması, Sağ 1	Night Illumination, Right 1	Iluminación Nocturna Derecha 1	Eclairage Nocturne, Droit 1	Illuminazione Notturna, Destra 1
32K003	4	Engelliler Asansörü Kapisi Kapalı Bilgisi Rölesi	Handicapped Lift Door Relay (Door Close)	Relé de la Puerta del Elevador para Minusválidos (Puerta Cerrada)	Relais Porte D'Ascenseur Pour Personne Handicapée (Portiere Fermée)	Rele' Portello Ascensore Per Disabili (Portello Chiuso)
10Y001	5	Açaltma Manyetik Valfi (Ön Aks)	Kneeling Valve (Steering Axle)	Válvula de Inclinación (Eje de Dirección)	Électrovalve Abaisser	Valvola Di Abbassamento (Assale Sterzo)
05H002	6	Allison Şanzıman Uyarı Lambası	Allison Transmission Warning Lamp	Luz de Advertencia de la Transmisión Allison	Voyant d'avertissement de la transmission Allison	Spia trasmissione Allison
11Y007	7	Ön Kapi Solenoid Valfi	Front Door Control Valve	Válvula de Control de Puerta Delantera	Electrovalve Porte 1	Valvola Controllo Porta Anteriore
10Y006	13	Yükseltme Manyetik Valfi (Tahrikli Aks)	Lifting Valve (Drive Axle)	Válvula de Elevación (Eje de Tracción)	Electrovanne Relever	Valvola Di Sollevamento (Assale Trazione)
10Y002	15	Açaltma Manyetik Valfi (Tahrikli Aks)	Kneeling Valve (Drive Axle)	Válvula de Inclinación (Eje de Tracción)	Électrovalve Abaisser	Valvola Di Abbassamento (Assale Trazione)
24Y001	17	Merkezi Kilit Valfi	Central Locking Valve	Válvula de Cierre Centralizado	Soupape De Verrouillage Central	Valvola Blocco Centrale
01K005	19	Motor Stop Rölesi	Engine Stop Relay	Relé de Parada del Motor	Relais Arrêt Du Moteur	Rele' Arresto Motore

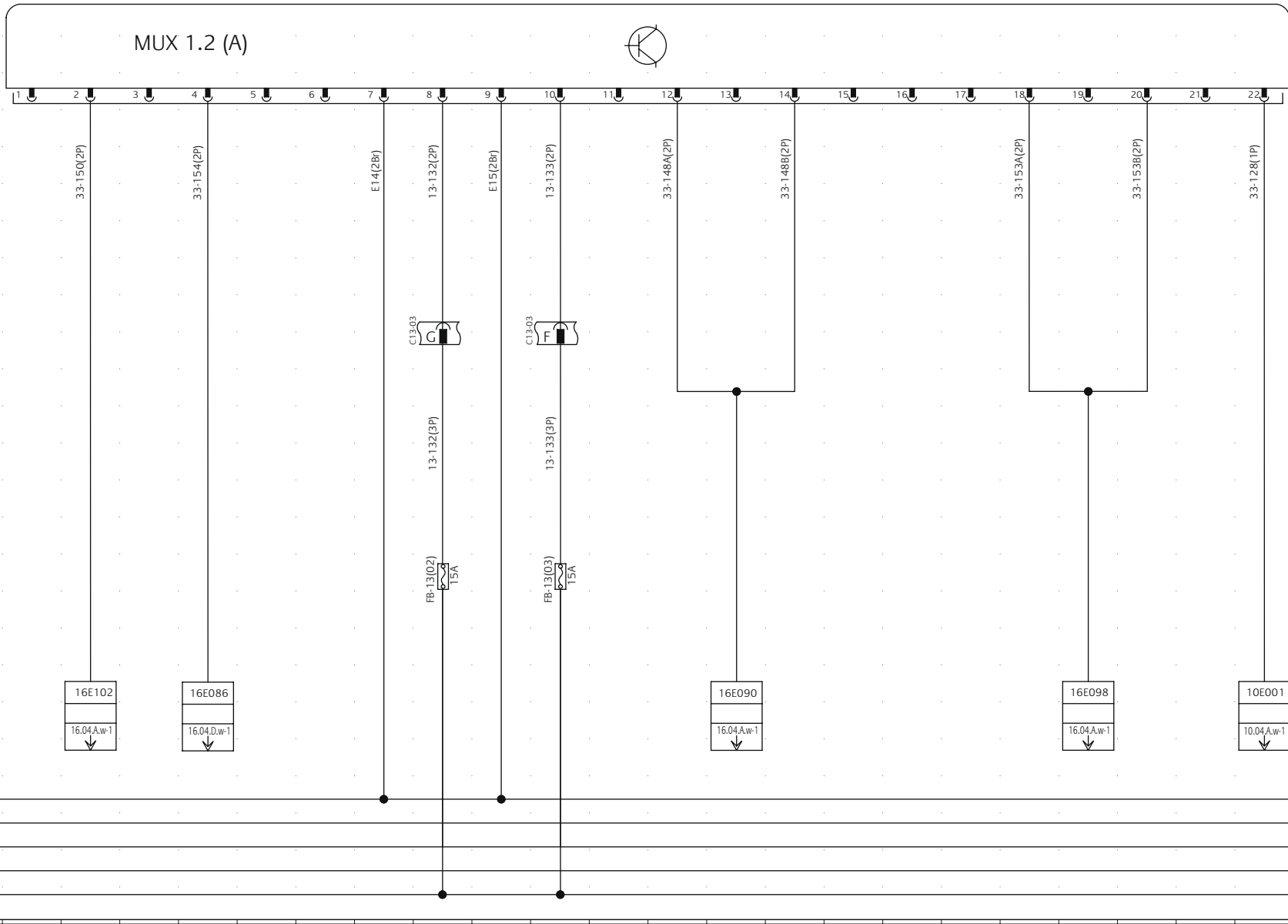
06A001





06A004

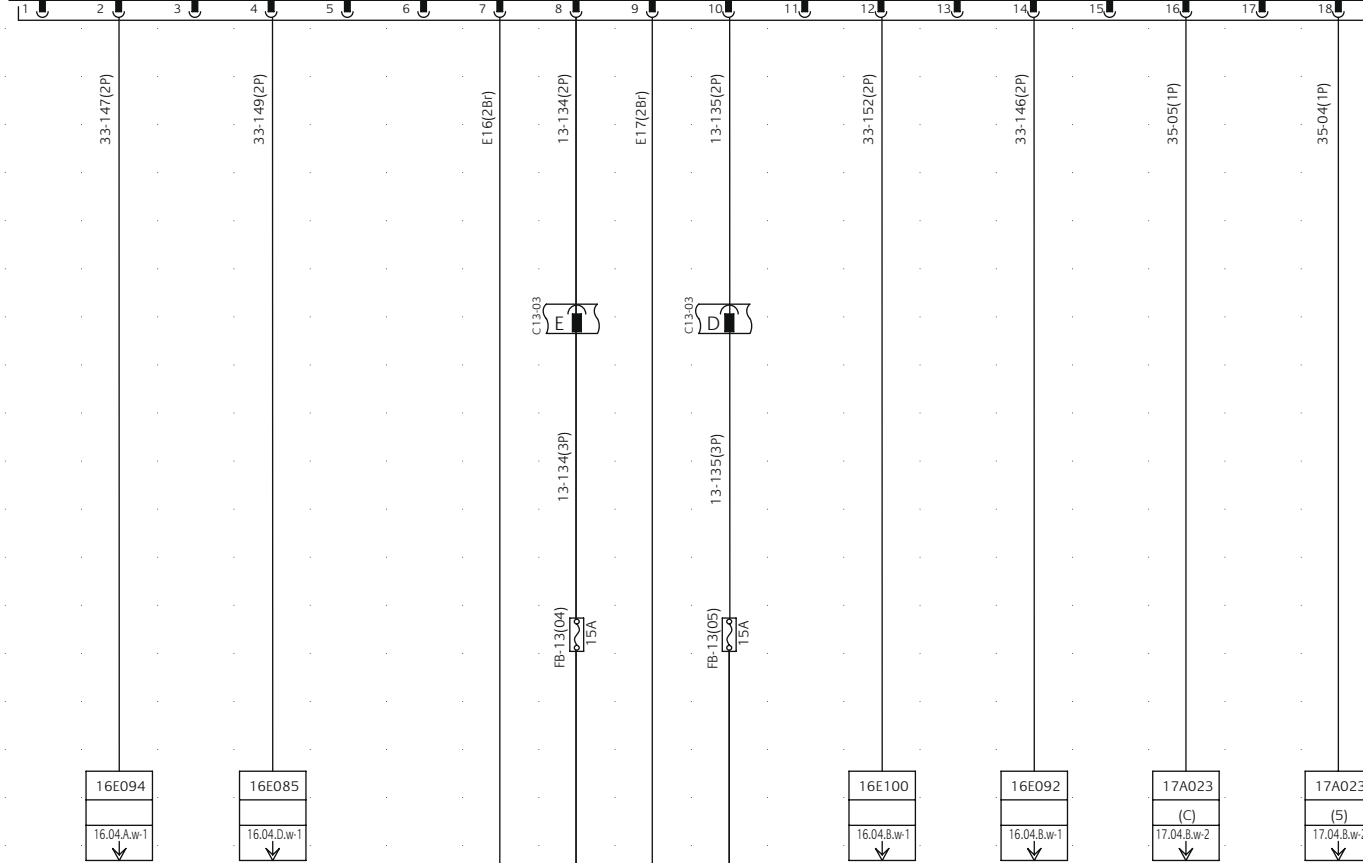
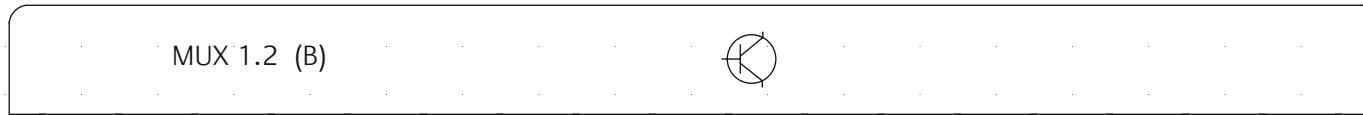
MUX 1.2 (A)



KL 31  
 KL 58  
 KL 30  
 KL 15  
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06A004



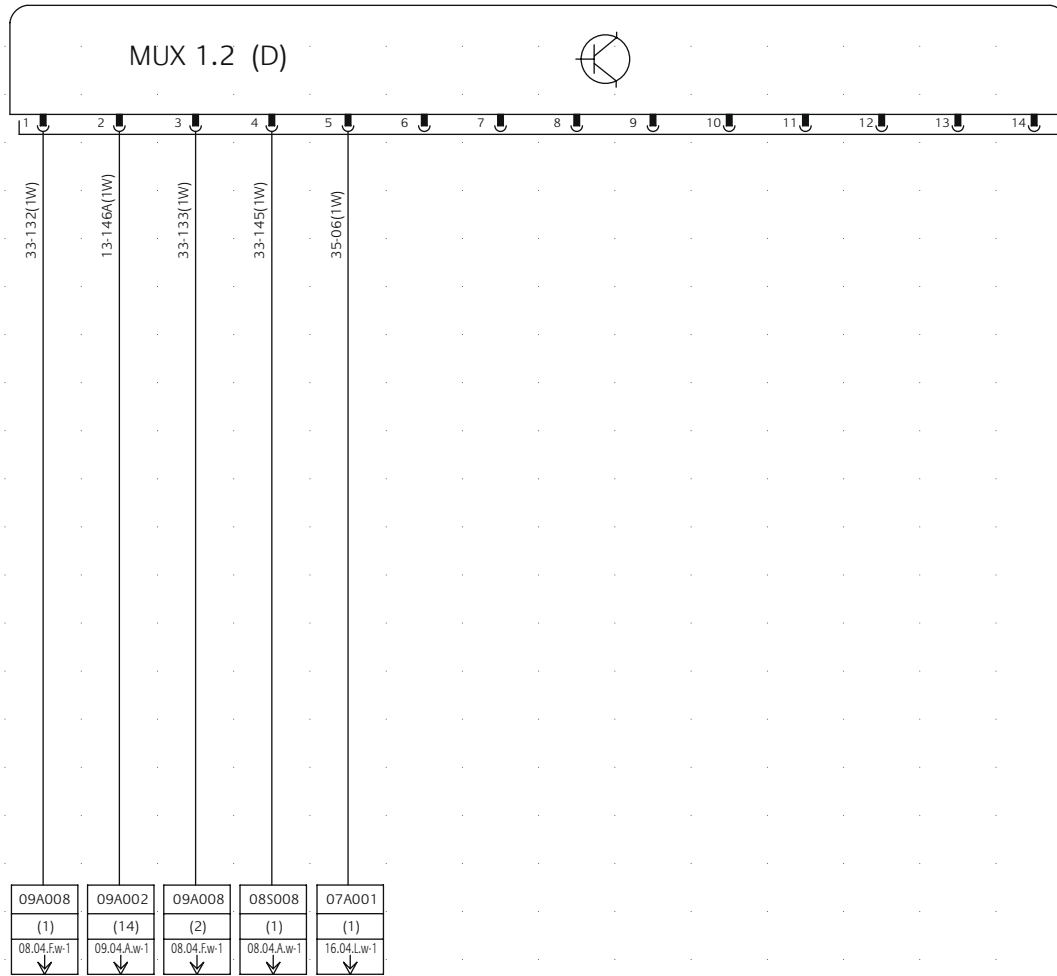
KL 31  
KL 58  
KL 30  
KL 15  
12V - KL 30



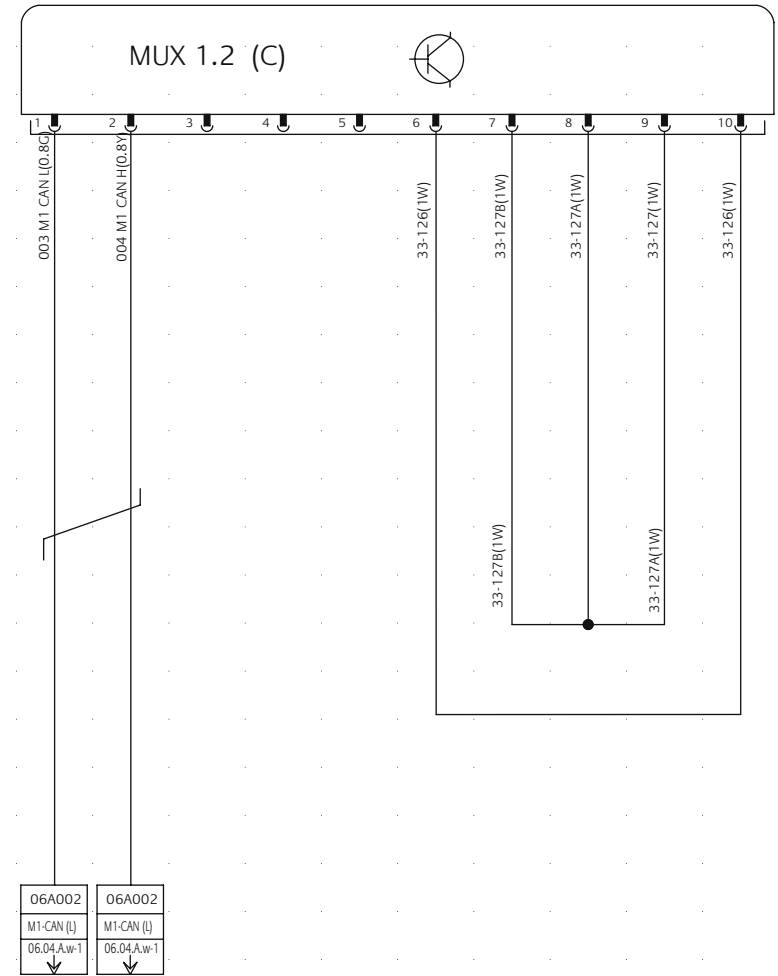


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06A004



06A004

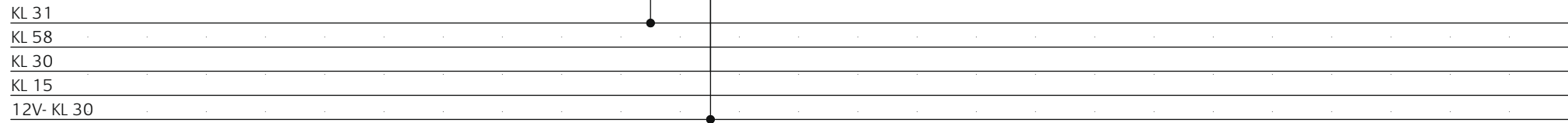
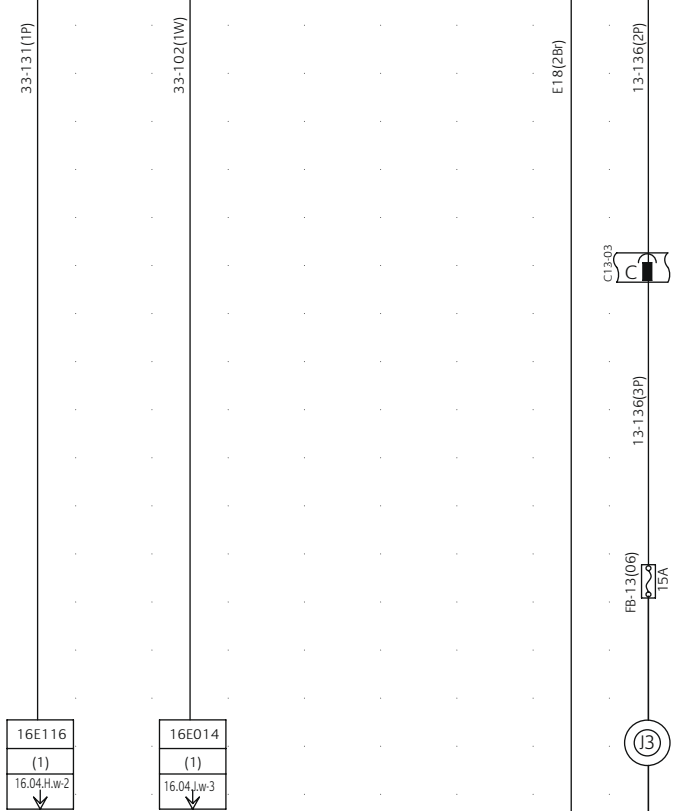
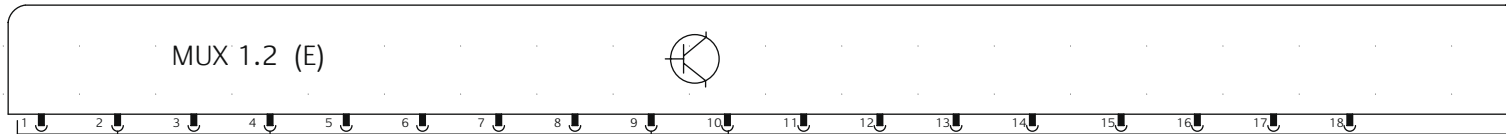


KL 31  
 KL 58  
 KL 30  
 KL 15

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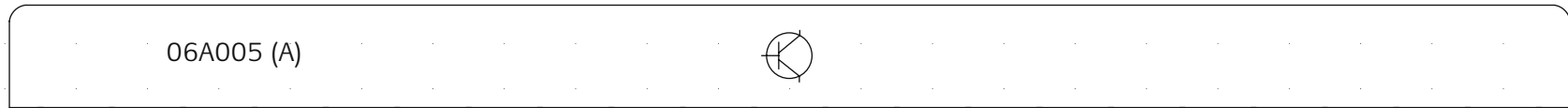
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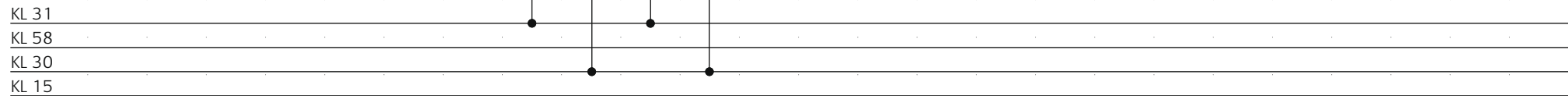
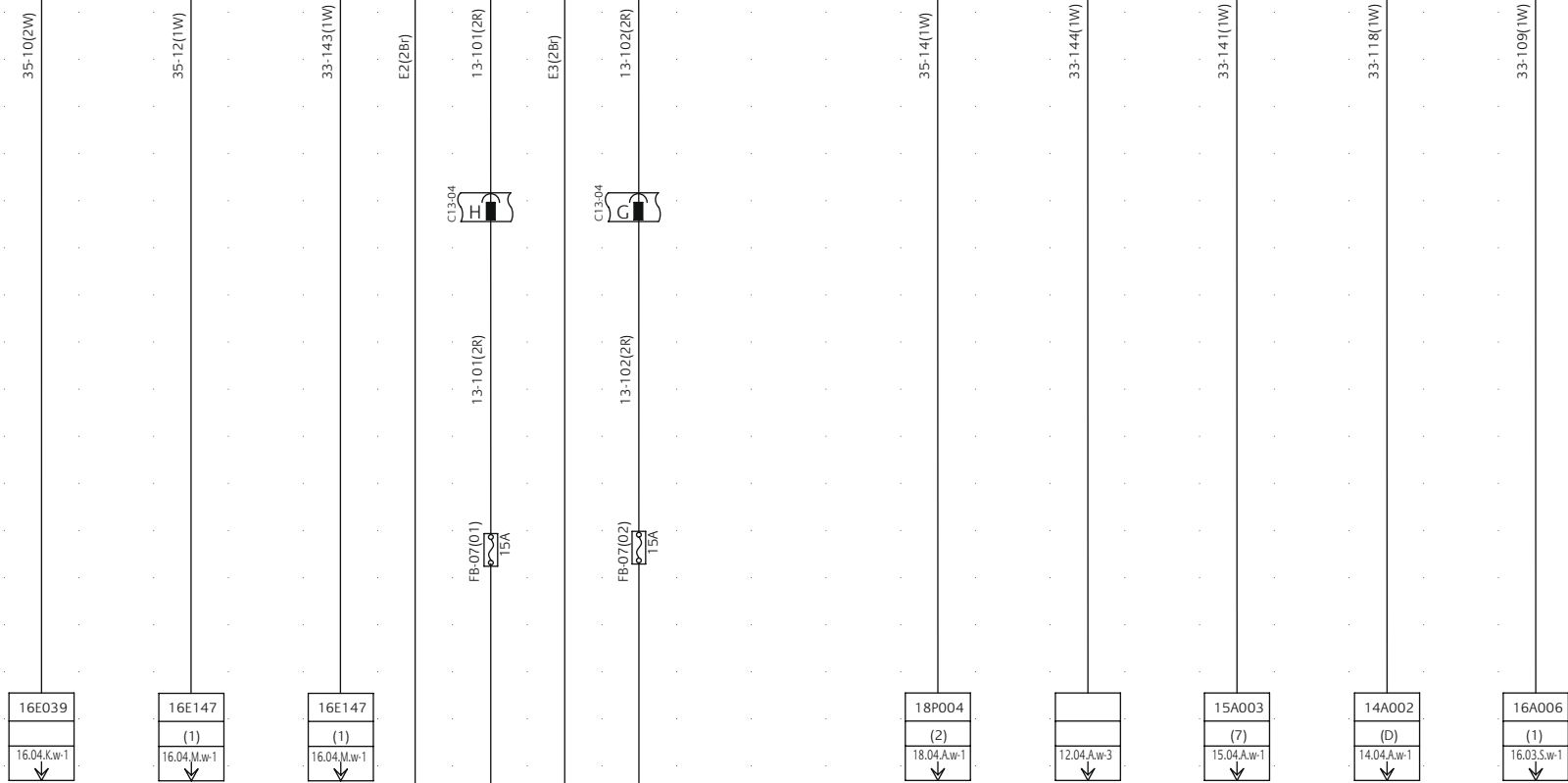
Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A005	11	Mux 1.3	Mux 1.3	Multiplexor 1,3	Mux 1,3	Mux 1,3
16E045	3	İç Aydınlatma Lambası 1, Sol	Interior Lighting 1, Left	Iluminación de Interiores 1, Izquierda	Eclairage Interieur 1, Gauche	Illuminazione Interna, Sinistra 1
18P004	5	Tuvalet Ve Emniyet Kemerini Uyarı Göstergesi	Wc And Safety Belt Warning Display	Pantalla de Advertencia de WC y Cinturones de Seguridad	Voyant Lumineux Toilette Occupés Et Ceinture De Sécurité	Cicalino Di Avviso Cinture Di Sicurezza E Wc
12A004	7	Klima Kumanda Cihazı (Wabco-Sütrak)	Hvac Control Unit (Wabco-Sütrak)	Unidad de Control del Climatizador (Wabco-Sutrak)	Unité De Commande Hvac (Wabco-Sütrak)	Unita' Di Controllo Hvac (Wabco-Sütrak)
16E071	13,15	Okuma Lambaları, Sağ	Reading Lamps, Right	Lámparas de Lectura, Derecha	Lampes De Lecture, Droit	Lampade Per Lettura, Destra
18B004	17	Elektrikli Korna (Sağ)	Electrical Horn (Right)	Claxon Eléctrico (Derecha)	Avertisseur Electrique (Droit)	Clacson Elettrico (Destra)
18B003	19	Elektrikli Korna (Sol)	Electrical Horn (Left)	Claxon Eléctrico (izquierda)	Avertisseur Electrique (Gauche)	Clacson Elettrico (Sinistra )

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06A005



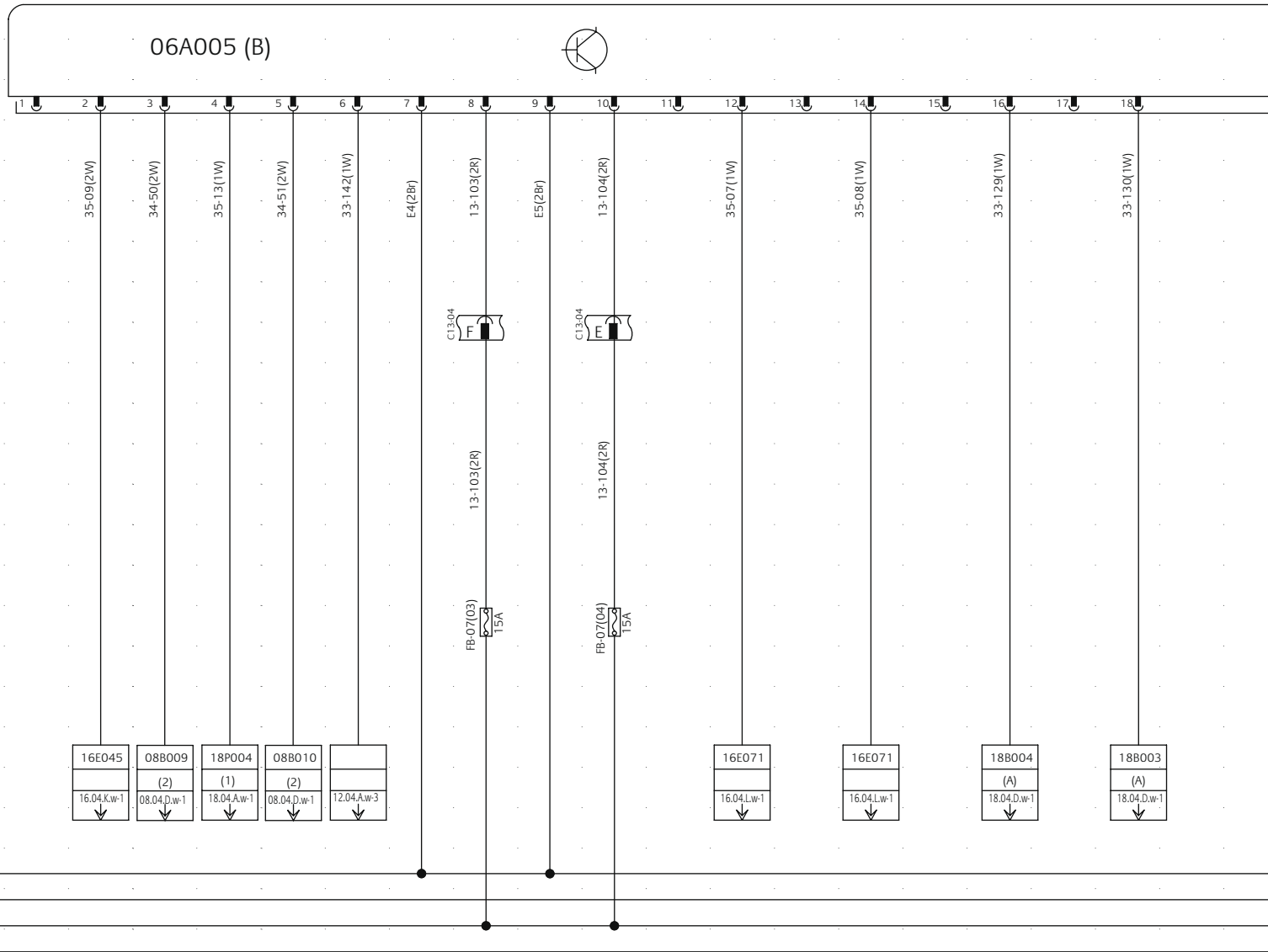
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06A005

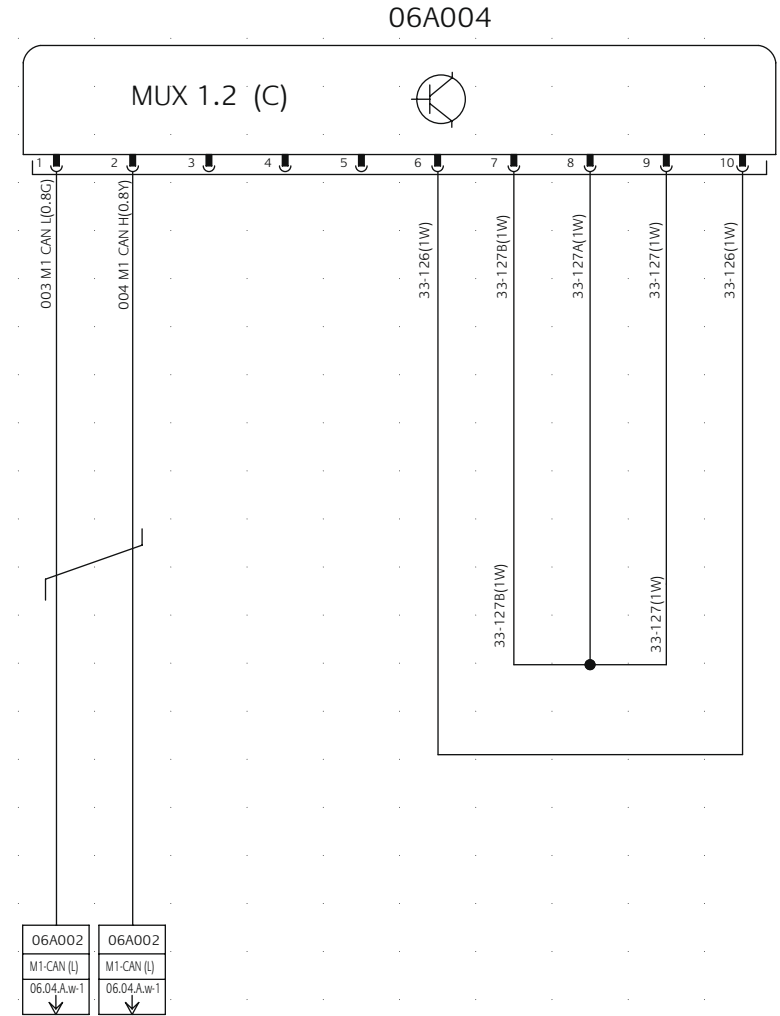
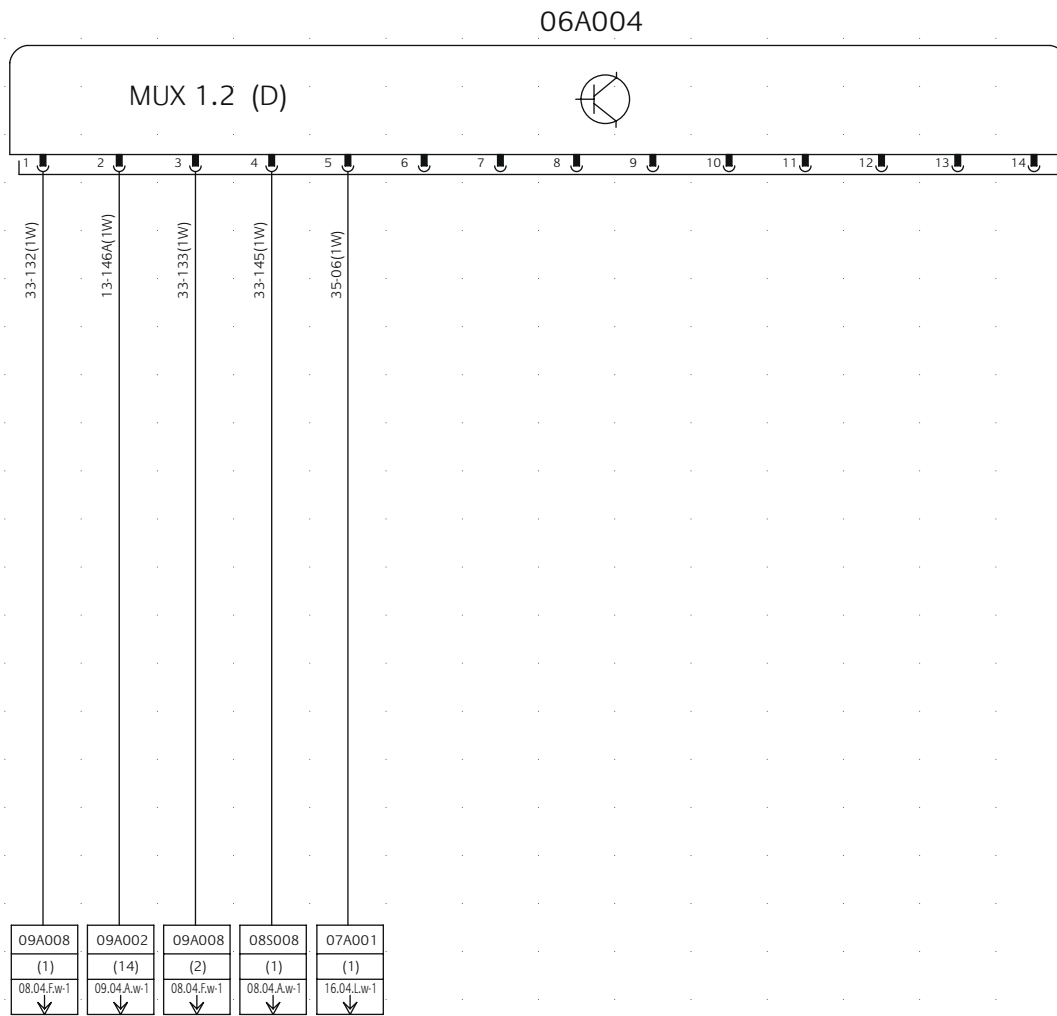


KL 31  
 KL 58  
 KL 30  
 KL 15





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KL 31

KL 58

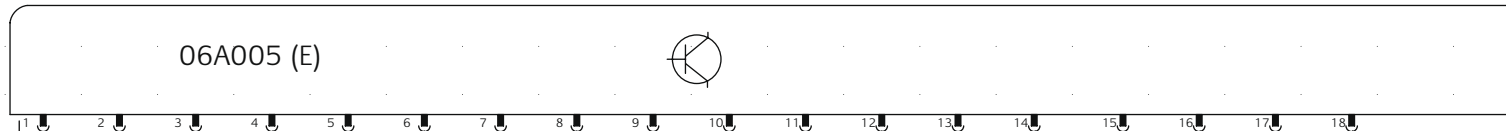
KL 30

KL 15

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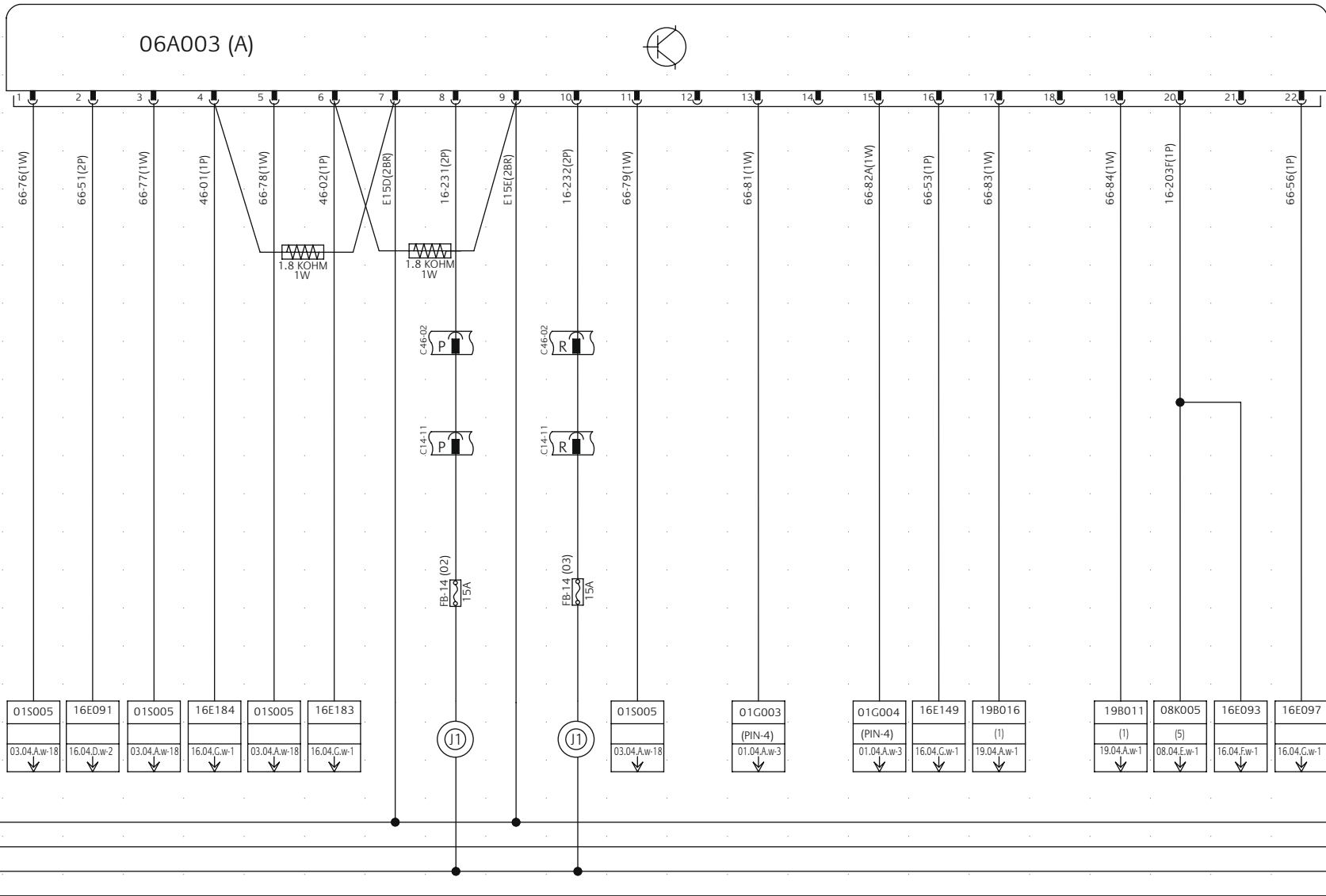
06A005



KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A003	12	Mux 2.1	Mux 2.1	Multiplexor 2,1	Mux 2,1	Mux 2,1
01S005	2,5,11	Motor Odasi Araç Çalıştırma/Durdurma Şalteri	Engine Room Start Stop Switch	Interruptor de Arranque/Parada del Compartimento del Motor	Commutateur Demarrage Arrêt Du Bloc Moteur	Interruttore Di Arresto Avvio Del Compartimento Motore
16E091	2	Plaka Lambası, Sağ	Licence Plate Lamp, Right	Luces de Matrícula, Derecha	Lampe De Plaque D'Immatriculation, Droit	Lampadina Targa, Destra
01S005	3	Motor Odasi Araç Çalıştırma/Durdurma Şalteri	Engine Room Start Stop Switch	Interruptor de Arranque/Parada del Compartimento del Motor	Commutateur Demarrage Arrêt Du Bloc Moteur	Interruttore Di Arresto Avvio Del Compartimento Motore
16E184	4	Geri Vites Lambası, Arka Sol Yan	Back Up Light, Rear Left Side	Luz de Marcha Atrás, Lateral Trasero Izquierdo	Feu De Recul, Arriere Gauche	Luce Di Backup, Lato Sinistro Posteriore
16E183	7	Geri Vites Lambası, Arka Sağ Yan	Back Up Light, Rear Right Side	Luz de Marcha Atrás, Lateral Trasero Derecho	Feu De Recul, Arriere Droit	Luce Di Backup, Lato Destro Posteriore
01G003	13	Alternatör 1	Alternator 1	Alternador 1	Alternateur 1	Alternatore 1
01G004	16	Alternatör 2	Alternator 2	Alternador 2	Alternateur 2	Alternatore 2
16E149	17	Geri Vites Lambası, Sağ	Back Up Light, Right	Luz de Marcha Atrás, Derecha	Feu De Recul, Droit	Luce Di Backup, Destra
19B016	18	Yangın İkaz Sensörü 2 (Motor Odasi)	Fire Warning Sensor 2 (Engine Room)	Sensor de Alarma de Incendios 2 (Hueco del Motor)	Capteur D'Avertisseur De Feu 2 (Bloc Moteur)	Sensore Allarme Incendio 2 (Compartimento Motore)
19B011	19	Yangın İkaz Sensörü (Arka Röle Paneli)	Fire Warning Sensor (Rear Relay Panel)	Sensor de Alarma de Incendios (Panel de Relés Trasero)	Capteur D'Avertisseur De Feu (Panneau De Relais Arriere)	Sensore Allarme Incendio (Pannello Rele' Posteriore)
08K005		Fren Lambası Rölesi	Stop Lamp Relay	Relé de Luz de Parada	Relais Du Feu D'Arrêt	Rele' Luce Per Fermata
16E093	22	Fren Lambası, Sağ	Stop Lamp, Right	Luz de Freno, Derecha	Feu D'Arret, Droit	Stop Destro
16E097	22	Geri Vites Lambası, Sol	Back Up Light, Left	Luz de Marcha Atrás, Izquierda	Feu De Recul, Gauche	Luce Di Backup, Sinistra

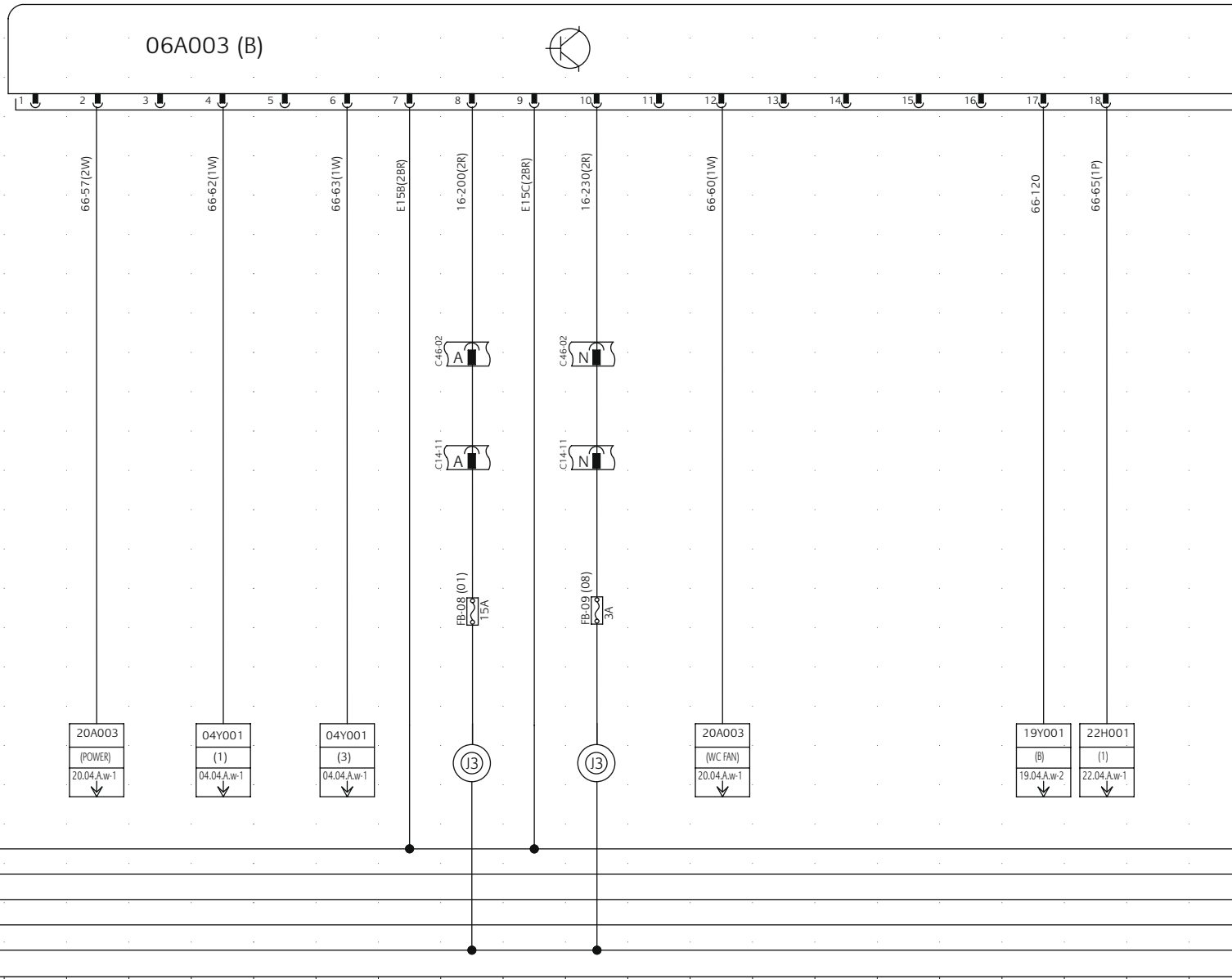
06A003



KL 31  
 KL 58  
 KL 30  
 KL 15

Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A003	11	Mux 2.1	Mux 2.1	Multiplexor 2,1	Mux 2,1	Mux 2,1
20A003	2,12	Tuvalet Sistemi Tesisati	Wc Unit Harness	Arnés del WC	Harnais De Toilette	Cinghia Unita' Wc
04Y001	4,6	Oransal Valf (Radyatör)	Proportional Valve (Radiator)	Válvula Proporcional (Radiador)	Soupape Proportionnelle (Radiateur)	Valvola Proporzionale (Radiatore)
22H001		Geri Sürüş İkaz Düdüğü	Reverse Travel Buzzer	Aviso Sonoro de Marcha Atrás	Bruiteur De Marche Arriere	Cicalino Retro

06A003

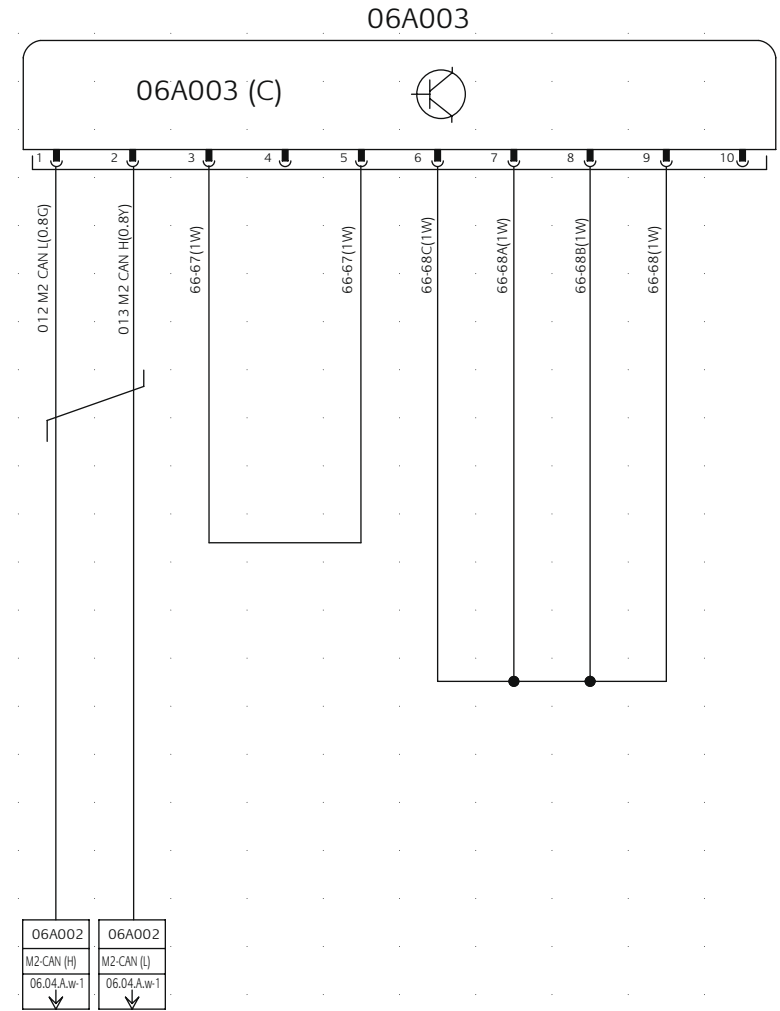
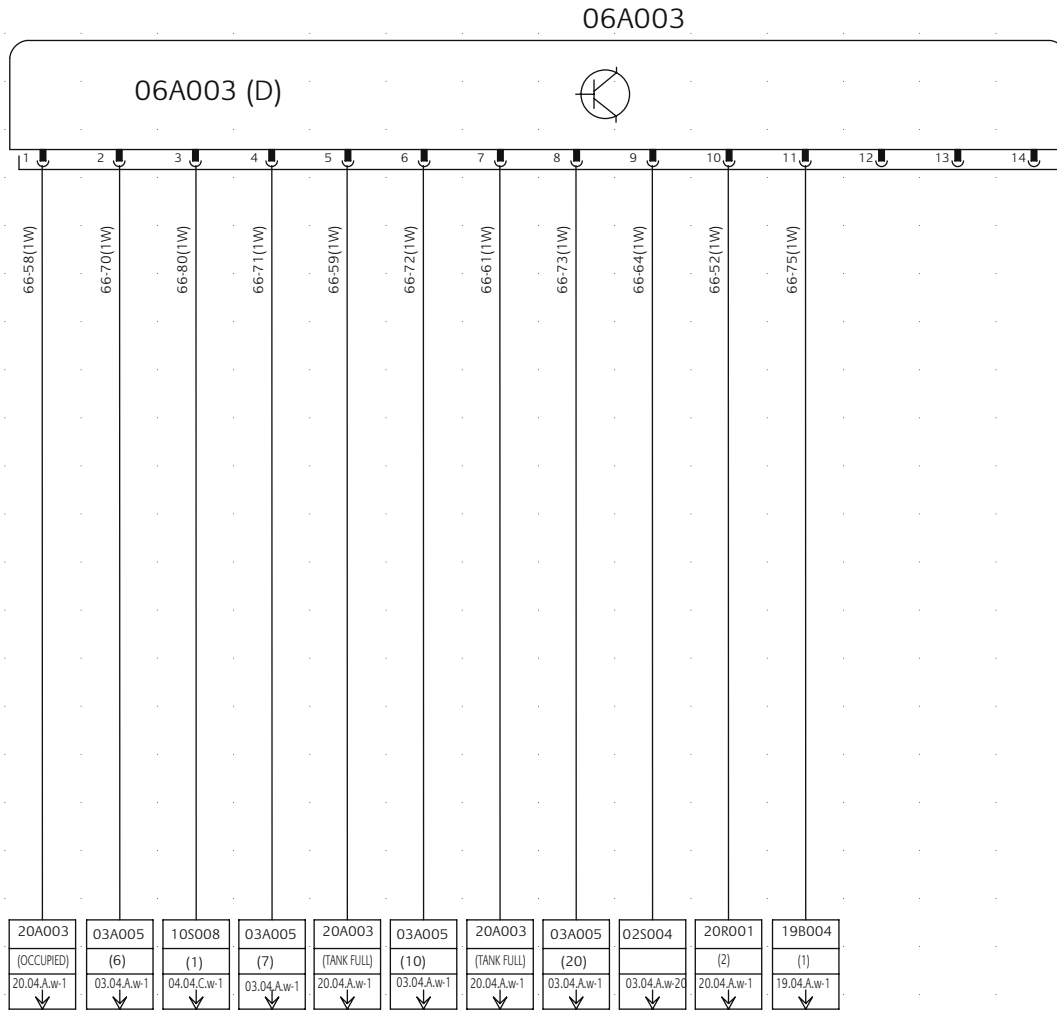


KL 31  
 KL 58  
 KL 30  
 KL 15  
 12V - KL 30

Code	Part No	Türkçe	English	Spanish	Français	Italiano
06A003	11	Mux 2.1	Mux 2.1	Multiplexor 2,1	Mux 2,1	Mux 2,1
20A003	1,5,7	Tuvalet Sistemi Tesisati	Wc Unit Harness	Arnés del WC	Harnais De Toilette	Cinghia Unita' Wc
03A005	2,8	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
10S008	3	Hava Filtresi Göstergesi Şalteri	Air Filter İndicator Switch	Interruptor indicador del filtro de aire	"Switch Air indicateur du filtre "	"Air Switch indicatore filtro "
03A005	4,6	Motor Elektronik Kontrol Ünitesi (60 Pinli Soket)	Engine Electronic Control Unit (Cummins Engine Control Module 60Pin Connector)	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)	Unita' Di Controllo Elettronica Del Motore (Modulo Di Controllo Motore Cummins)
02S004	9	Motor Bölmesi Kapağı Güvenlik Şalteri	Engine Compartment Lid Safety Switch	Interruptor de la puerta de seguridad del Compartimento del Motor	Couvercle du Compartiment Moteur interrupteur de securite	Il coperchio del vano motore interruttore di sicurezza
20R001	10	Tuvalet Sistemi Tankı Isıtıcısı	WC Tank Heater	00000	00000	00000
19B004	11	Yangın İkaz Sensörü (Motor Odası)	Fire Warning Sensor (Engine Room)	Sensor de Alarma de Incendios (Hueco del Motor)	Capteur D'Avertisseur De Feu (Bloc Moteur)	Sensore Allarme Incendio (Compartimento Motore)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25



KL 31

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KL 58

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KL 30

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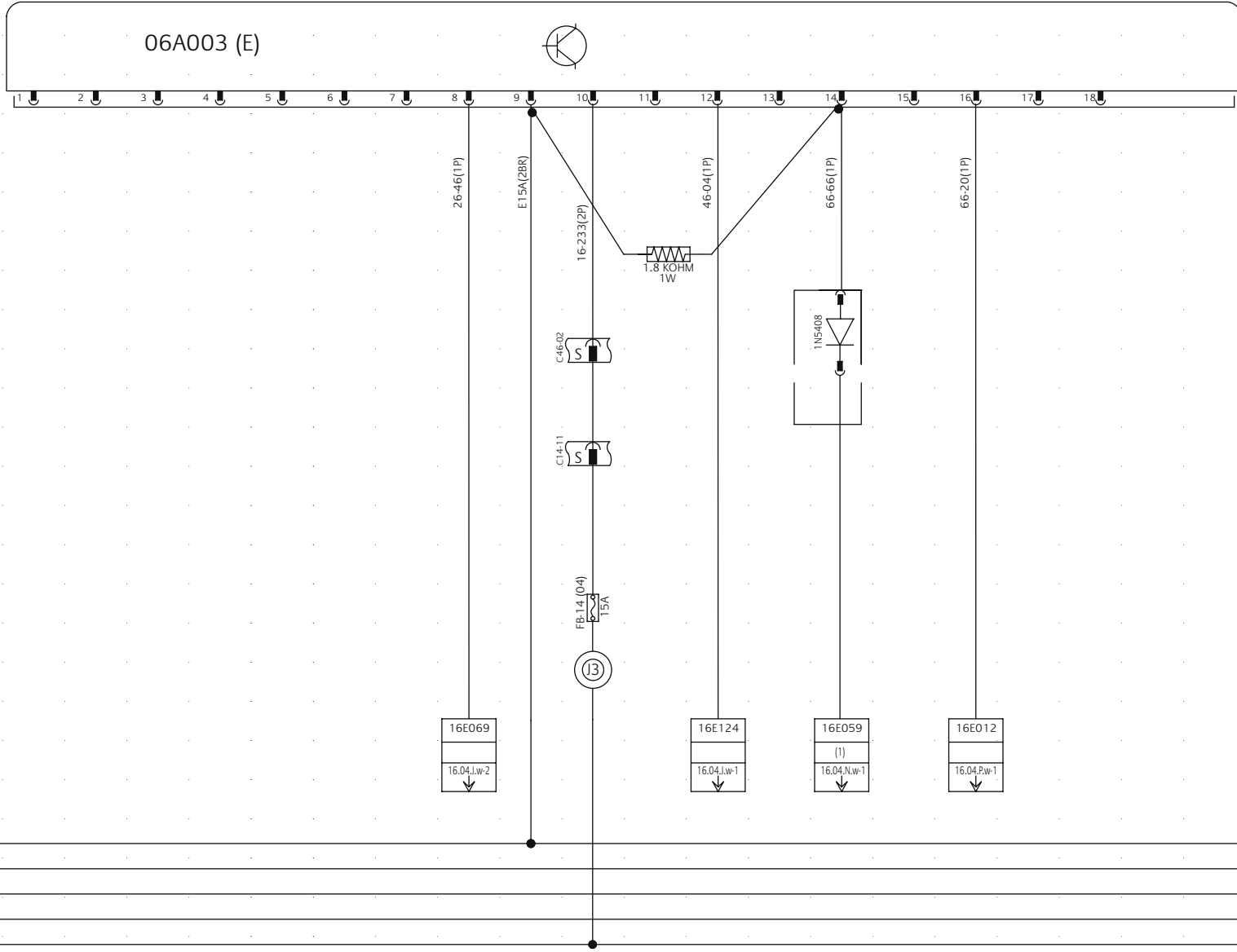
KL 15

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25



06A003



SOCKET A ( 22 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	SOFTWARE DESCRIPTION
AB_HeatMirror	RELAY PANEL LUGGAGE LAMP	14-214	1	2	14-105	AB_front_Relay_Panel_Lighting
AB_FrntRlyPnl.lmp	FRONT RIGHT REAR GEAR LAMP	14-215	3	4	14-103	AB_Lamp_Reverse_Gear_Right(Front)
AB_FrntRlyPnl.lmp	FRONT RIGHT LEFT GEAR LAMP	14-300	5	6	14-104	AB_LAMP_REVERSE_GEAR_LEFT (FRONT)
	Ground	Br	7	8	11-28	Power (Kl+30)
	Ground	Br	9	10	11-29	Power (Kl+30)
" EB_switch-rble panel " or 2. opt. " EB_D+_ALTERNATOR-1 "	RELAY PANEL SW.	14-28	11	12	14-106	LUGGAGE PARK LAMP
EB_Switch_Rear_Left_Luggage_Open(Preheater)	PREHEATER AREA SW	14-90	13	14	14-79	LUGGAGE SW. POWER
arka-elektrik-odasi-acik	REAR FUSE ROOM SW.	16-110	15	16	11-36	aisle LAMP
EB_LUGGAGE_OPEN_SAG(2)_ON	LUGGAGE LID OPEN	14-301	17	18		
EB_LUGGAGE_OPEN_SOL(2)_ON	LUGGAGE LID OPEN	14-302	19	20	15-01	ROOF PARK LAMP
EB_LUGGAGE_OPEN_SOL(3)_ARKA	LUGGAGE LID OPEN	14-3031	21	22	15-02	ROOF FRONT MARKER LAMP
						AB_Lamp_Power_Roof_Side_Position
SOCKET B ( 18 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	SOFTWARE DESCRIPTION
EC_Sensor_Fuel_Tank_Level	FUEL TANK SENSOR	14-80	01	02	14-217	LIFT DOOR WHITE LAMP
			03	04	14-102	DOOR SIDE LAMP
			05	06	11-37	STEP LAMP
	Ground	Br	07	08	11-30	Power (Kl+30)
	Ground	Br	09	10	11-31	Power (Kl+30)
			11	12	14-208	LIFT POWER CUT OF SIGNAL
EB_ASR_PLOT_LAMP	ASR LAMP	11-27	13	14	16-500	ENGINE START SIGNAL
EB_Sensor_Fire_Front_Electric_Panel	RELAY PANEL FIRE SIGNAL	11-33	15	16		
			17	18		
						AB_Handicapped_Lift_control_Pow
						AB_Engine_Start_Command
SOCKET C ( 10 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	SOFTWARE DESCRIPTION
	M1 CAN-L	003	01	02	004	M1 CAN-H
	MUX Termination		03	04		
	MUX Termination		05	06	11-03C	" 0 "
	" 0 "	11-03B	07	08	11-03A	" 0 "
	" 0 "	11-03	09	10		
SOCKET D ( 14 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	SOFTWARE DESCRIPTION
EB_Sensor_Brake_Lining_Front_Left	BRAKE LINNING OUT 1	11-11	01	02	11-12	BRAKE LINNING OUT 3
EB_Sensor_Brake_Lining_Rear_Right	BRAKE LINNING OUT 2	11-13	03	04	11-14	BRAKE LINNING OUT 4
EB_Switch_Door_Front_Closing	DOOR PRESSURE SW.	14-13	05	06	14-14	DOOR PRESSURE SW.
EB_Sensor_Door_Front_Open	MICRO SW.	14-16	07	08	14-17	SAFETY MICRO SW.
EB_Sensor_Fire_Fuel_Tank	LUUGGAGE FIRE SENSOR	14-78	09	10	14-205	LIFT STOW SIGNAL
EB_Door_Lift(Rear)_Unlocked_Sgn	LIFT DOOR UNLOCK	14-212	11	12	14-213	LIFT DOOR LOCK
			13	14		
						EB_Sensor_Brake_Lining_Front_Right
						EB_Sensor_Brake_Lining_Rear_Left
						EB_FR_DOOR_PRESS
						EB_Sensor_Door_Front_Safety
						EB_Nicon_Lift_Stowed_Signal
						EB_Door_Lift(Rear)_Emergency_Stop_Button
SOCKET E ( 18 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	SOFTWARE DESCRIPTION
AB_Door_Lift(Rear)_Lock_Control_Sgn	LIFT DOOR LOCK RELAY 1	11-22	01	02	35-15	AUXILIARY LAMP
AB_Door_Lift(Rear)_Unlock_control_Sgn	LIFT DOOR LOCK RELAY 2	11-24	03	04	14-37	KNEELING VALVE
	LIFT DOOR YELLOW LAMP	14-216	05	06	14-15	DOOR VALVE
	INVERTOR ENABLE	11-56	07	08	14-109	TEMP. BUS STOP VALVE
	Ground	Br	09	10	11-32	Power (Kl+30)
	STOP LAMP OUT	11-202C	11	12	14-81	LIFTING VALVE
			13	14	14-82	KNEELING VALVE
			15	16	14-32	CENTRAL LOCK VALVE
			17	18	14-17	ENGINE STOP SIGNAL
						AB_Valve_Lifting
						AB_Central_Lock_Valve_Control_
						AB_Engine_Stop_Command

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Note:

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SOCKET A ( 22 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			1	2	33-150	FRONT HIGH BEAM SPOT LAMP LEFT	AB_Lamp_High_Beam_Front_Left&Spot_Light_Power
			3	4	33-154	FRONT RIGHT PARK LAMP	AB_Lamp_Park_Front_Left
			5	6			AB_Lamp_Signal_Front_Left_(
	Ground	E7	7	8	13-132	Power (KL+30)	
	Ground	E8	9	10	13-133	Power (KL+30)	
			11	12	33-148A	FRONT LOW BEAM RIGHT LAMP	AB_Lamp_Beam_Low_Right_Power-1
			13	14	33-148B	FRONT LOW BEAM RIGHT LAMP	AB_Lamp_Beam_Low_Right_Power-2
			15	16	-	-	
EB_Valve_A/C_Roof			17	18	33-153A	FRONT LOW BEAM LEFT LAMP	AB_Lamp_Beam_Low_Left_Power-1
EB_Valve_A/C_Convector			19	20	33-153B	FRONT LOW BEAM LEFT LAMP	AB_Lamp_Beam_Low_Left_Power-2
EB_Info_Compressor_On			21	22	33-128	KNEELING LAMP	AB_Kneeling_(Outside)Lamp_Power
SOCKET B ( 18 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			01	02	33-147	FRONT HIGH BEAM SPOT LAMP RIGHT	AB_Lamp_High_Beam_Front_Right&Spot_Light_Power
			03	04	33-149	FRONT RIGHT PARK LAMP	AB_Lamp_Park_Front_Right
			05	06			AB_Lamp_Signal_Front_Right_(D
	Ground	E9	07	08	13-134	Power (KL+30)	
	Ground	E10	09	10	13-135	Power (KL+30)	
			11	12	33-152	FRONT LEFT FOG LAMP	AB_Lamp_Fog_Front_Left
			13	14	33-146	FRONT RIGHT FOG LAMP	AB_Lamp_Fog_Front_Right_Power
			15	16	35-05	A/V KL-58	AB_Audio/Video_System_Lighting
			17	18	35-04	A/V KL-15	AB_Audio/Video_System_Power(K
SOCKET C ( 10 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
	M1 CAN-L	003	01	02	004B	M1 CAN-H	
	MUX Termination		03	04			
	MUX Termination		05	06	33-126		
	* 0 "	11-03B	07	08	33-127A		
	* 0 "	11-03	09	10	33-126		
SOCKET D ( 14 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
	BRAKE PEDAL 1, INPUT	33-132	01	02	13-146A	ABS RED LAMP OUT	
	BRAKE PEDAL 2, INPUT	33-133	03	04	33-145	PARK BRAKE RELEASE	
	HOSTES LAMP	35-06	05	06			
			07	08			
			09	10			
			11	12			
			13	14			
SOCKET E ( 18 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			01	02	33-131	LEFT LUGGAGE SIDE LAMP	AB_Lamp_Position_for_Luggage_Lids
			03	04	33-102	LUGGAGE SIDE LAMP	mux_lighting(mux1.3 and mux1.2 area)
			05	06			
			07	08			
	Ground	E11	09	10	13-136	Power (KL+30)	
			11	12			AB_Lamp_Driver
			13	14			AB_Info_Foot_Brake_Applied
			15	16			AB_Alarm_Assault
			17	18			

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Note:

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SOCKET A ( 22 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			1	2	35-10	INTERIOR LIGHT	AB_Lamp_Room_1
			3	4	35-12	DRIVER LIGHTING	AB_LAMP_DRIVER_LIGHTING
EB_Button_Bus_Stop_2			5	6	33-143	D+ SIGNAL	AB_D+for_A/C
	Ground	Br	7	8	13-101	Power (Kl+30)	
	Ground	Br	9	10	13-102	Power (Kl+30)	
			11	12			
EB_Button_Handicapped_Passanger_Stop_Request_In			13	14	35-14	SEAT BELT	AB_WCFull
			15	16	33-144	KL-58 FOR A/C	AB_Wiper_Interval_Stage_Power
EB_Sensor_Handicapped_Passanger_Lift_Close			17	18	33-141	WIPER MOTOR INTERVAL SW.	AB_Wiper_Interval_Stage_Power
EB_Button_Handicapped_Passanger_Stop_Request_Out			19	20	33-118	MIRROR HEATER	AB_Heater_Mirror_Power
			21	22	33-109	PARK OUT	AB_Lamp_Park_On(Dimmer_Power)
SOCKET B ( 18 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
35-09			01	02	35-09	INTERIOR LIGHT	AB_Lamp_Room_2
35-13			03	04	35-13	WC OCCUPIED	AB_Fasten_Your_Seat_Belt
33-142			05	06	33-142	DOOR CLOSING SIGNAL	AB_EVAP_FAN_CANCELLATION_PWR
13-103	Ground	Br	07	08	13-103	Power (Kl+30)	
13-104	Ground	Br	09	10	13-104	Power (Kl+30)	
35-07			11	12	35-07	READING LAMP	AB_LAMPS_READING-1
35-08			13	14	35-08	READING LAMP	AB_LAMPS_READING-2
33-129			15	16	33-129	RIGHT HORN	AB_Horn_Right_Power
33-130			17	18	33-130	LEFT HORN	AB_Horn_Left_Power
SOCKET C ( 10 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
	M1 CAN-L	003A	01	02	004A	M1 CAN-H	
	MUX Termination	33-103	03	04			
	MUX Termination	33-103	05	06	33-104B	" 0 "	
	" 1 "	33-105	07	08	33-104A	" 0 "	
	" 0 "	33-104	09	10	33-105	" 1 "	
SOCKET D ( 14 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EB_Sensor_Luggage_Open_Sgn	LUGGAGE SW	33-101	01	02	33-155	TRANSMISSION LAMP	
	DPF FORCE SW.	33-106	03	04	33-156	REAR GEAR SIGNAL	
EB_Park_Brake_Switch	PARKING BRAKE SW.	33-119	05	06	33-157	RETARDER WARNING LAMP	
EB_Sensor(Air)_Brake_Applied_2_Sgn	STOP LAMP SENS. 2	33-123	07	08	33-158	OIL TEMPERATURE WARNING SIGNAL	
EB_Sensor(Air)_Brake_Applied_1_Sgn	STOP LAMP SENS. 1	33-124	09	10	33-159	NEUTRAL GEAR SINGAL	
EB_Wiper_3Tb_Signal(Zero-Pos)	WIPER 3Tb	33-136B	11	12			
EC_Sensor_Air_Pressure_Rear	BRAKE TANK SENSOR 2	33-121	13	14	33-122	BRAKE TANK SENSOR 2	EC_Sensor_Air_Pressure_Front
SOCKET E ( 18 PINS )							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
AB_Audio/Video_System_Disable	VIDEO CONTROL_Disable	35-03	01	02			
AB_Curtain_Down			03	04	33-120	STEERING CONTROL	AB_Valve_Steering_Column_Pow
AB_Ignition_Off_Enable			05	06	33-107	DIMMER LEVEL SW. UP	AB_Dimmer_Up_Signal
AB_Emergency_Door_Unlock_LS			07	08	33-108	DIMMER LEVEL SW. DOWN	AB_Dimmer_Down_Signal
	Ground	E6	09	10	13-105	Power (Kl+30)	
AB_Emergency_Door_Lock_LS			11	12	33-125	HOSTESS LAMP OUT	AB_Hostes_Lamp_Power
AB_Fan_Circulation_On			13	14	33-138	WASHER SW	AB_Wiper_Washer_Motor_Power
AB_A/C_Idle_Up			15	16	33-139	WIPER MOTOR FAST SW	AB_Wiper_High_Stage_Power
AB_Accelerator_Interlock			17	18	33-140	WIPER MOTOR SLOW SW	AB_Wiper_Low_Stage_Power

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Note:

SOCKET A ( 22 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EB_Engine_Start_Switch_Engine_Comp	ENGINE STOP (ENGINE ROOM)	66-76	1 2	66-51	POSITION LAMP	AB_Lamp_Park_Rear_Group
EB_Engine_STOP_Switch_Engine_Compartment	ENGINE START (ENGINE ROOM)	66-77	3 4	46-01		AB_Lamp_Reverse_Gear_Left(Sid
EB_Engine_Room_Lamp_Sw	ENG. START-STOP LAMP	66-78	5 6	46-02	REAR GEAR LAMP	AB_Lamp_Reverse_Gear_Right(Side-Rear)
	Ground	Br	7 8	16-231	Power (KL+30)	
	Ground	Br	9 10	16-232	Power (KL+30)	
EB_Ignition_Control_Sw_from_Engine	ENG.START-STOP_IGNITION	66-79	11 12			AB_Lamp_Signal_Rear_Right_(Di
EB_D+_ALTERNATOR-1	ALTERNATOR- 01 (DATA PIN)	66-81	13 14			AB_Lamp_Stop_Rear-1
EB_D+_ALTERNATOR-2	ALTERNATOR- 02 (DATA PIN)	66-82A	15 16	66-53	STOP LAMP	AB_Lamp_Reverse_Gear_Right(Rear)
EB_FIRE_PREHEATER_COMP.	FIRE WARNING SENSOR	66-83	17 18			AB_Lamp_Signal_Rear_Left_(Dir
EB_FIRE_ENGINE_COMP-1	FIRE WARNING SENSOR	66-84	19 20	16-203F	STOP LAMP	AB_Lamp_Stop_Rear-2
			21 22	66-56	BACK UP LAMP	AB_Lamp_Reverse_Gear_Left(Rear)
SOCKET B ( 18 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			01 02	66-57	WC OCCUPIED LAMP	AB_WC_Power_On
			03 04	66-62	LINNIC COOLING CLUTCH VALVE	AB_Radiator_Clutch-1_Control
			05 06	66-63	LINNIC COOLING CLUTCH VALVE	AB_Radiator_Clutch-2_Control
	Ground	Br	07 08	16-200	Power (KL+30)	
	Ground	Br	09 10	16-230	Power (KL+30)	
			11 12	66-60	WC FAN	AB_WCFanON
			13 14			
			15 16			
			17 18	66-65	Reverse_Gear Buzzer	AB_Buzzer_Reverse_Gear
SOCKET C ( 10 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
	M2 CAN-L	012	01 02	013	M2 CAN-H	
	MUX 2.1 Termination	66-67	03 04	66-68C	" 0 "	
	MUX 2.1 Termination	66-67	05 06	66-68B	" 0 "	
	" 0 "	66-68A	07 08			
	" 0 "	66-68	09 10			
SOCKET D ( 14 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EB_Switch_WC_Empty_Info	WC OCCUPIED LAMP	66-58	01 02	66-70	CUMMINS ENGINE ECM	EB_Info_Cummins_Wait-to-Start
EB_SWITCH_AIR_FILTER_WARNING	AIR FILTER	66-80	03 04	66-71	CUMMINS ENGINE ECM	EB_DPF_Signal(DieselParticulateRtrricula
EB_WC_Waste_Water_Tank_Full	WC TANK FULL	66-59	05 06	66-72	CUMMINS ENGINE ECM	EB_HEST_Signal(HighExhaustTemp_Low_In
EB_WC_Emergency_Switch_Sgn	WC	66-61	07 08	66-73	CUMMINS ENGINE ECM	EB_DEF_Level_Low_Sgn(DieselExha
EB_Sensor_Engine_Lid_Closed	SAFETY SW.	66-64	09 10	66-52	WC TANK HEATER	EB_WC_CLEAN_WATER_TANK_FULL_SIGN
EB_Sensor_Engine_Room	FIRE WARNING SENSOR	66-75	11 12			
			13 14			
SOCKET E ( 18 PINS )						
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			01 02			AB_Signal_Rear_Right_Side
			03 04			AB_Signal_Rear_Right_Side
			05 06			AB_Signal_Rear_Left_Side
			07 08	26-46	LUGGAGE LAMP	AB_Lamp_Engine_Room
	Ground	Br	09 10	16-233	Power (KL+30)	
			11 12	46-04	REAR LUGGAGE LAMP	AB_Lamp_Power_Rear_Left_Luggage(Preh
			13 14	66-66	AISLE LAMP	AB_Lamp_Aisle(Rear_trio)
			15 16	66-20	LUGGAGE LAMP	AB_Lamp_Urea_Tank_Room
			17 18			

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Note:

SOCKET B ( 22 PINS )						
DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	
I CAN-H	002	1	2	001	I CAN-L	
PCAN H	008D	3	4	007D	PCAN L	
		5	6			
		7	8			
		9	10			
		11	12	11-53		
13-53	13-48	13	14			
		15	16			
		17	18			
		19	20			
		21	22			

SOCKET C ( 10 PINS )						
DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	
K CAN-H	006	01	02	005	K CAN-L	
	11-06	03	04			
	11-06	05	06	11-05		
		07	08	11-05		
M2 CAN-H	013	09	10	012	M2 CAN-L	

SOCKET D ( 14 PINS )						
DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	
Ground	Br	01	02	11-20	Wake-Up Signal 2	
Power (KL+30)	11-101	03	04	14-03		
M1 CAN-H	004	05	06	003	M1 CAN-L	
		07	08	11-04		
		09	10	11-04		
Pin 12 (120 Ohm )		11	12		Pin 11 (120 Ohm )	
P CAN-H	008	13	14	007	P CAN-L	

SOCKET E ( 18 PINS )						
DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	
		01	02			
		03	04			
	11-52	05	06			
	11-51	07	08			
	11-50	09	10			
	11-35	11	12			
	11-09	13	14			
	11-08	15	16			
	11-07	17	18			



# 07

# DISPLAYS AND INSTRUMENTS SYSTEMS

## Locations

Instrument Cluster ..... 07.04.A.I-1

## Wiring Diagram

Instrument Cluster ..... 07.04.A.w-1

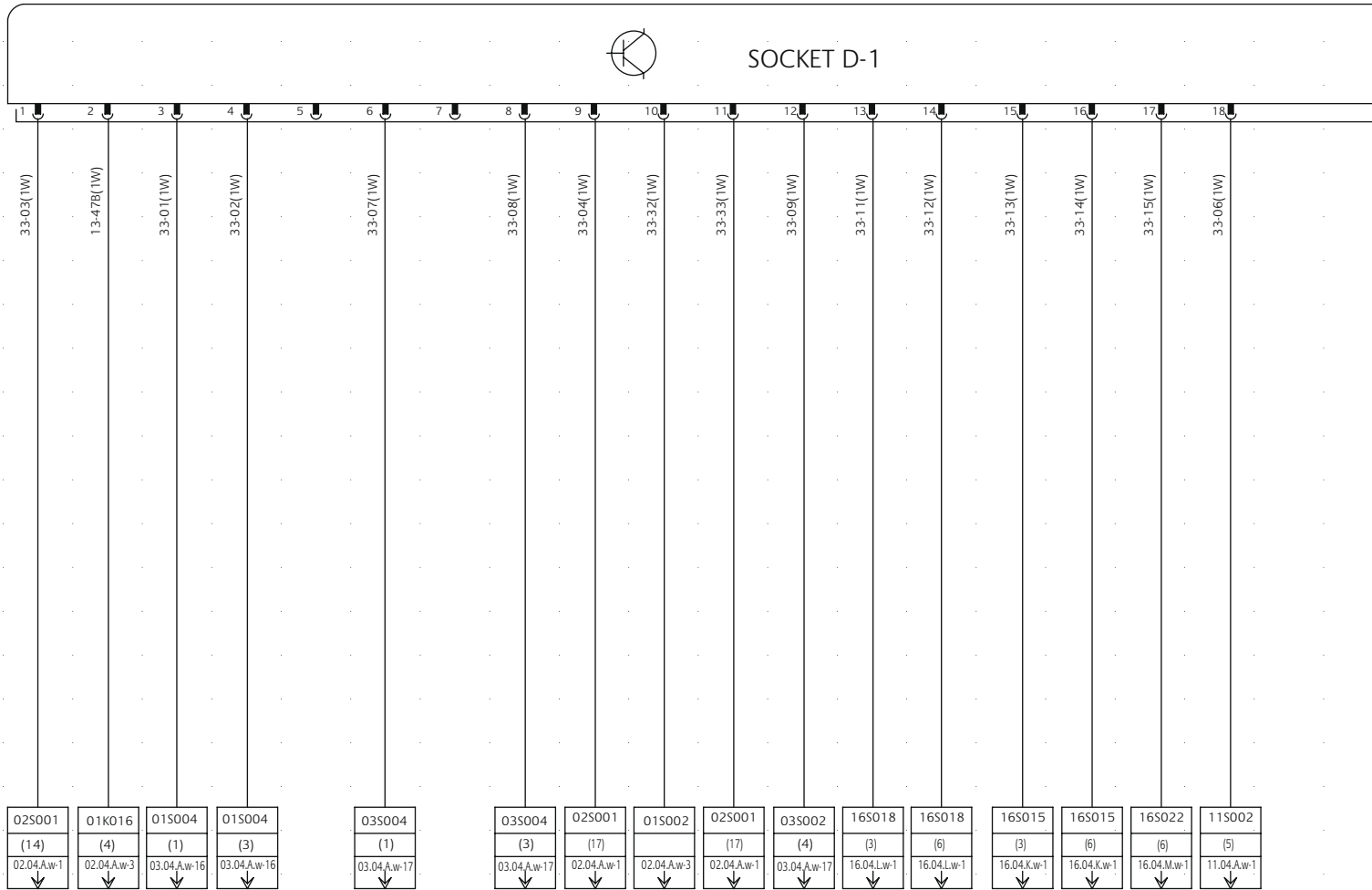
## Pin Description Lists

Instrument Cluster ..... 07.04.A.List

Code	Part No	Türkçe	English	Spanish	Français	Italiano
07A001	12	Kombi Gösterge	Instrument Cluster	Grupo de Instrumentos	Combiné D'Instruments	Gruppo Strumentazione
02S001	2	Flaşör Şalteri	Hazard Warning Signal Switch	Interruptor de Señalización de Peligro	Contacteur Feux De Détresse	Interruttore Segnale Avvertimento Pericolo
01K016	3	12V KI 15 Besleme Rölesi	12V KI15 Relay	Relé KI15 de 12V	Relais 12V KI15	Rele' KI15 12V
01S004	4,5	Motor Açma Kapama Şalteri	Engine Start Stop Control Switch	Interruptor de Control de Arranque/Parada del Motor	Contacteur De Commande Demarrage Arrêt Du Moteur	Interruttore Di Controllo Arresto Avvio Del Motore
11S002	6,19	Ön Kapi Kontrol Şalteri	Front Door Control Switch	Interruptor de Control de Puerta Delantera	Contacteur Porte 1 Conducteur	Interruttore Controllo Porta Anteriore
03S004	7,10	Hiz Sabitleyici Ayarlama Şalteri	Cruise Control Set/Resume Switch	Interruptor de Activación/Reanudación del Control de Crucero	Bouton De Commande Reglage/Reprise Regulateur De Vitesses	Interruttore Per Impostazione/Ritorno Cruise Control
02S001	10,12	Flaşör Şalteri	Hazard Warning Signal Switch	Interruptor de Señalización de Peligro	Contacteur Feux De Détresse	Interruttore Segnale Avvertimento Pericolo
01S002	11	Kontak Açık Şalteri	Ignition On Switch	Interruptor de Encendido del Contacto	Contacteur Contact Mis	Interruttore Accensione
03S002	13	Hiz Sabitleyici Kontrol Şalteri	Cruise Control Active Switch	Interruptor de Control de Crucero Activo	Bouton De Commande Regulateur De Vitesses	Interruttore Cruise Control Attivo
16S018	14,15	Okuma Lambaları Şalteri	Reading Lamps Switch	Interruptor de Luces de Lectura	Contacteur Libération Lampes De Lecture	Interruttore Lampade Per Lettura
16S015	16,17	İç Aydınlatma Şalteri (Kademe 1)	Interior Lighting Switch 1	Interruptor de Iluminación de Interiores 1	Contacteur Éclairage Niveau 1 Et 2 Habitable	Interruttore Illuminazione Interna 1
16S022	18	Sürücü Mahalli Aydınlatması Şalteri	Driver Lighting Switch	Interruptor de Iluminación del Conductor	Contacteur Lampe Du Poste Du Conducteur	Interruttore Illuminazione Conducente

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

07A001



KL 31

KL 58

KL 30

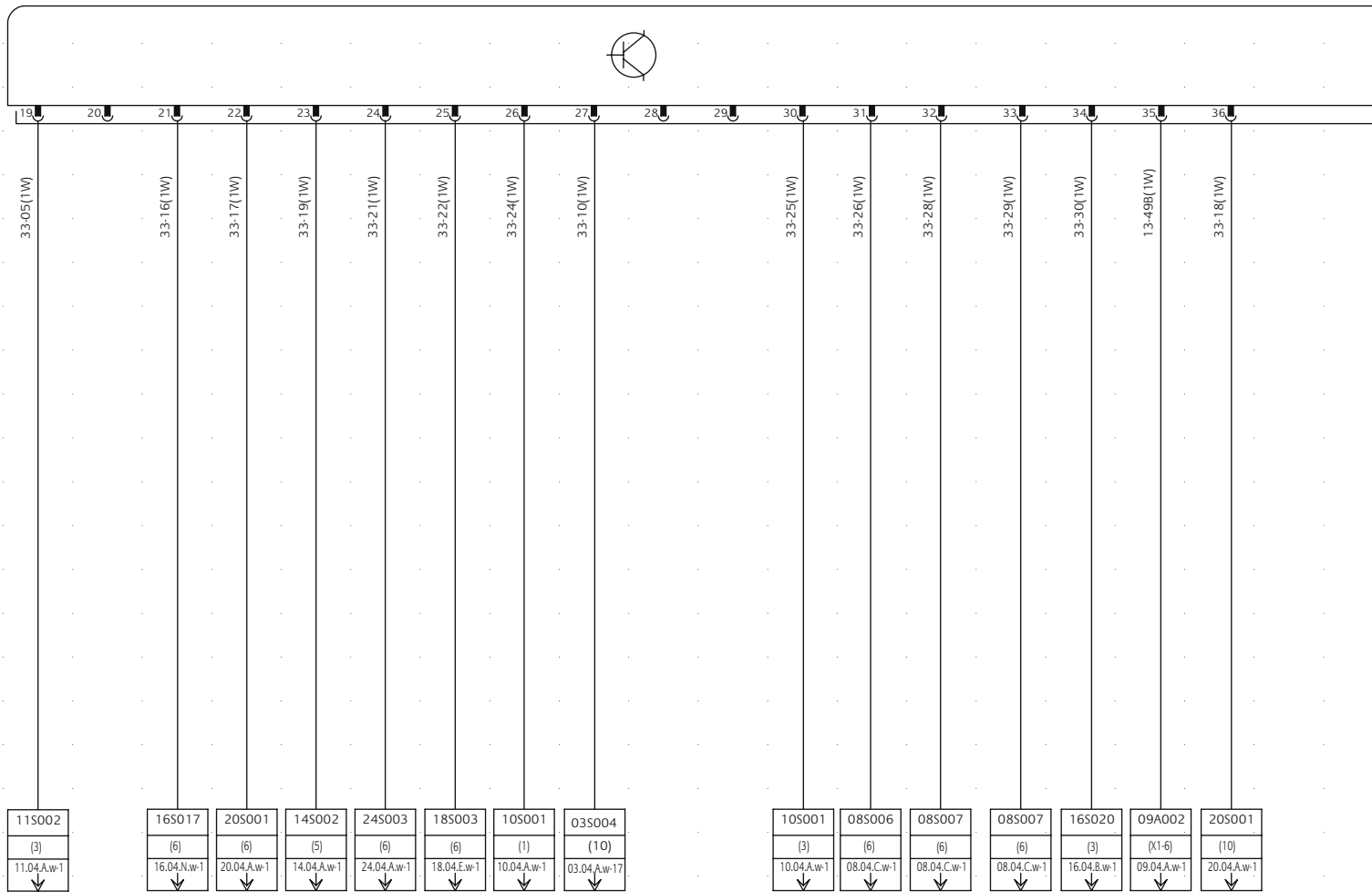
KL 15

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Code	Part No	Türkçe	English	Spanish	Français	Italiano
07A001	11	Kombi Gösterge	Instrument Cluster	Grupo de Instrumentos	Combiné D'Instruments	Gruppo Strumentazione
16S017	4	Koridor Aydınlatması Şalteri	Aisle Illumination Switch	Interruptor de Iluminación de Pasillo	Contacteur Éclairage Couloir Central	Interruttore Illuminazione Corridoio
20S001	5	Tuvalet Sistemini Kapama Şalteri	Toilet System Off Switch	Interruptor de Apagado del WC	Contacteur Du Systeme D'Arret Des Toilettes	Interruttore Disattivazione Sistema Toilet
14S002	6	Ayna Isitici Şalteri	Mirror Heater Switch	Interruptor del Espejo Térmico	Contacteur Chauffage Du Rétro-viseur	Interruttore Riscaldatore Specchietto
24S003	7	Merkezi Kilit Şalteri	Central Locking Switch	Interruptor de Cierre Centralizado	Contacteur Du Verrouillage Central	Interruttore Blocco Centrale
09S002	8	Asr Şalteri	Asr Switch	Interruptor Asr	Commutateur Régulation Antipatinage Asr	Interruttore Asr
10S001	9,13	Alçaltma Ve Yükseltme Manyetik Valfleri Aktif Şalteri	Levelling Valve Switch	Interruptor de Válvula de Nivelación	Commande Soupape De Stabilisation	Interruttore Valvola Di Livellamento
03S004	10	Hiz Sabitleyici Ayarlama Şalteri	Cruise Control Set/Resume Switch	Interruptor de Activación/Reanudación del Control de Crucero	Bouton De Commande Reglage/Reprise Regulateur De Vitesses	Interruttore Per Impostazione/Ritorno Cruise Control
08S006	14	Motor Freni Aktif Şalteri	Compression Brake Active Switch	Interruptor Activo de Freno de Compresión	Contacteur De Commande Du Moteur De La Pedale De Pied / Pedale De Frein	Interruttore Attivo Freno Compresione
08S007	15,17	Motor Freni Seviye Şalteri	Compression Brake Level Switch	Interruptor de Nivel del Freno de Compresión	Contacteur D'Activation Du Frein Moteur	Interruttore Livello Freno Compresione
16S020	17	Ön Sis Lambası Şalteri	Front Fog Lamps Switch	Interruptor de Faros Antiniebla Delanteros	Contacteur Des Feux Antibrouillard Avant	Interruttore Lampadine Nebbia Anteriori
09A002	18	Abs Kumanda Cihazı (Wabco)	Abs Electronic Control Module (Wabco)	Módulo de Control Electrónico de ABS (WABCO)	Calculateur Système Antiblocage Abs	Modulo Di Controllo Elettronica Abs (Wabco)
20S001	19	Tuvalet Sistemini Kapama Şalteri	Toilet System Off Switch	Interruptor de Apagado del WC	Contacteur Du Systeme D'Arret Des Toilettes	Interruttore Disattivazione Sistema Toilet

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

07A001 SOCKET D-2

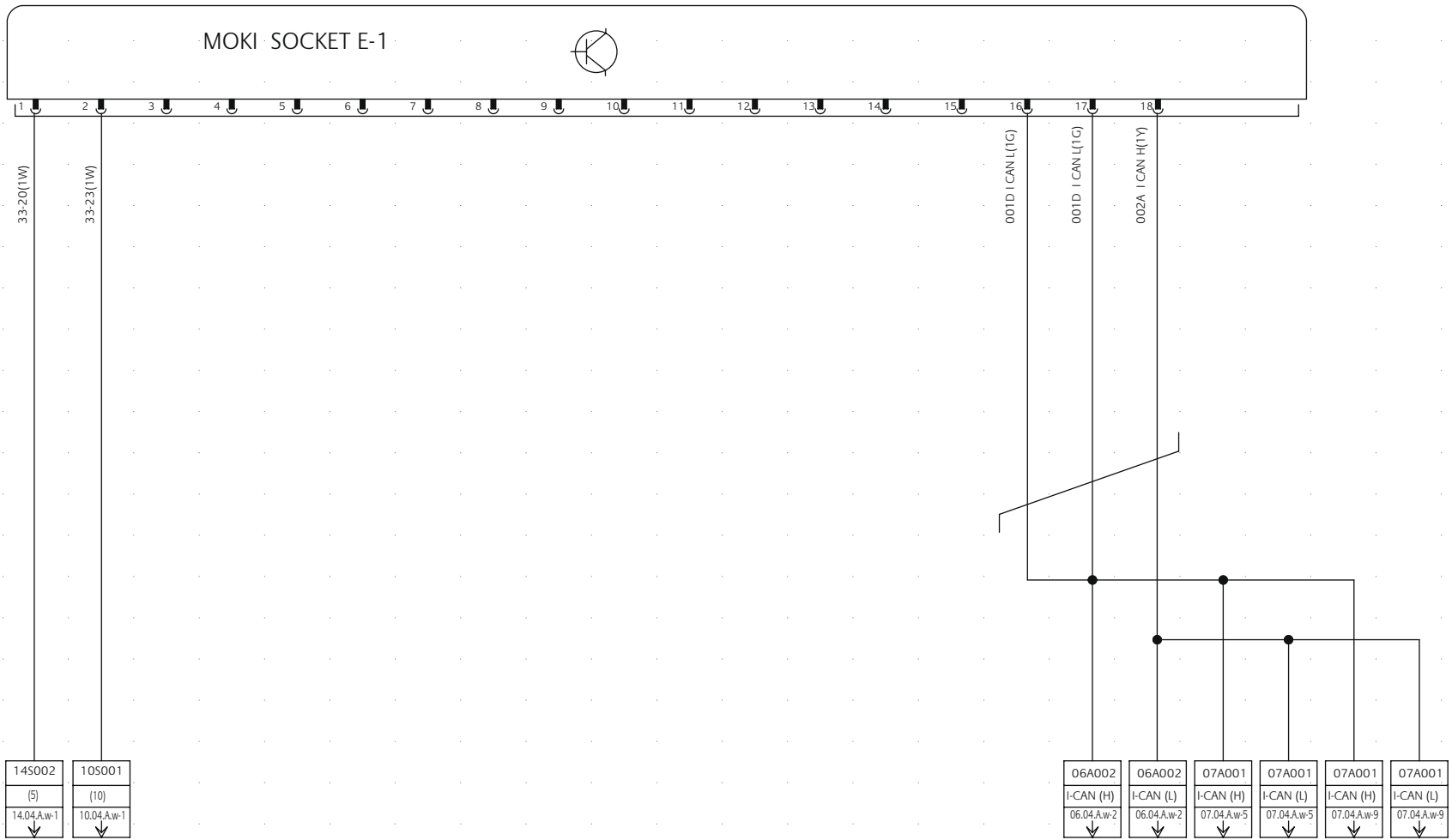


KL 31  
 KL 58  
 KL 30  
 KL 15

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25



07A001



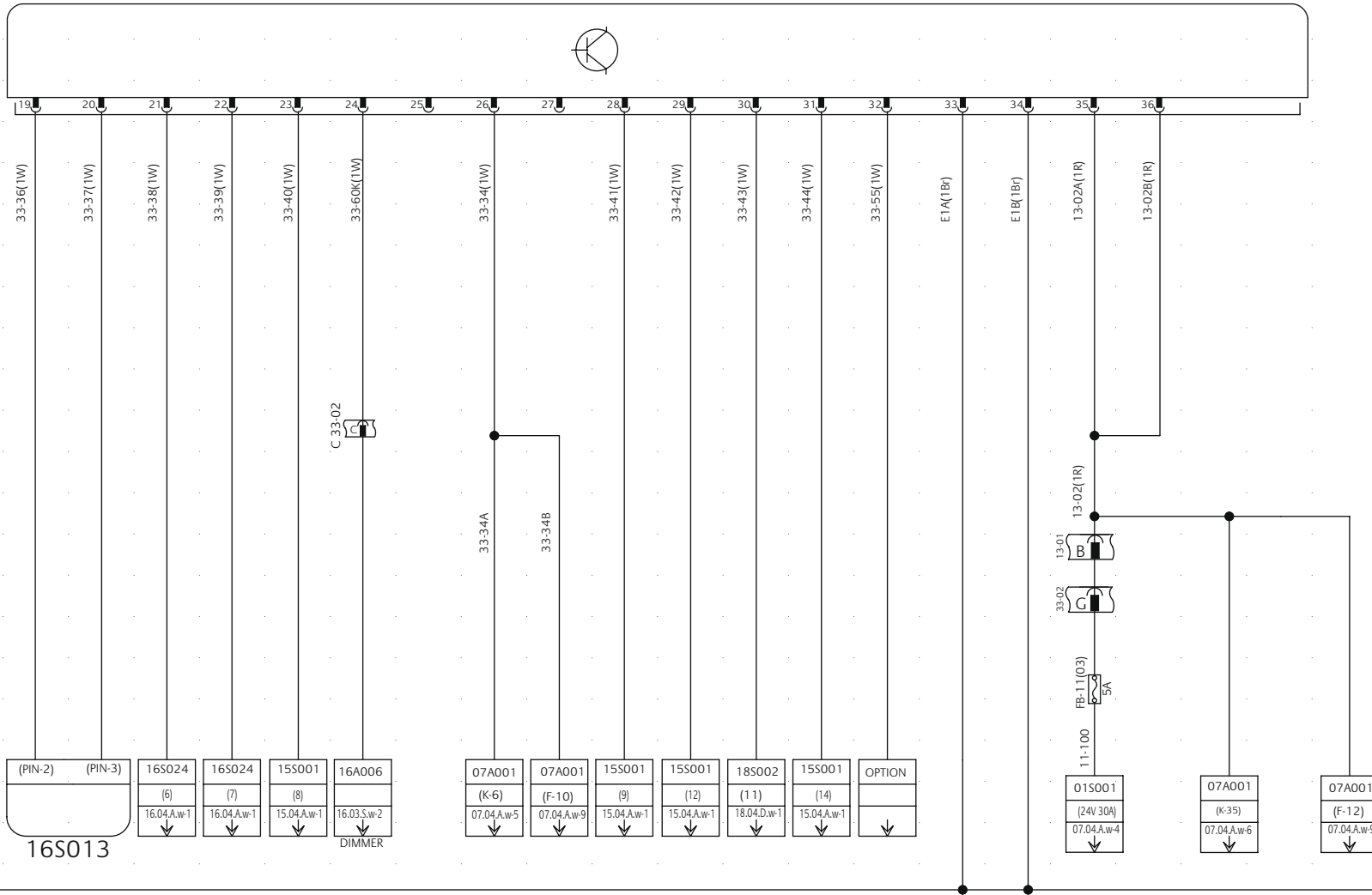
KL 31  
 KL 58  
 KL 30  
 KL 15





1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

07A001 SOCKET E-2



KL 31

KL 58

KL 30

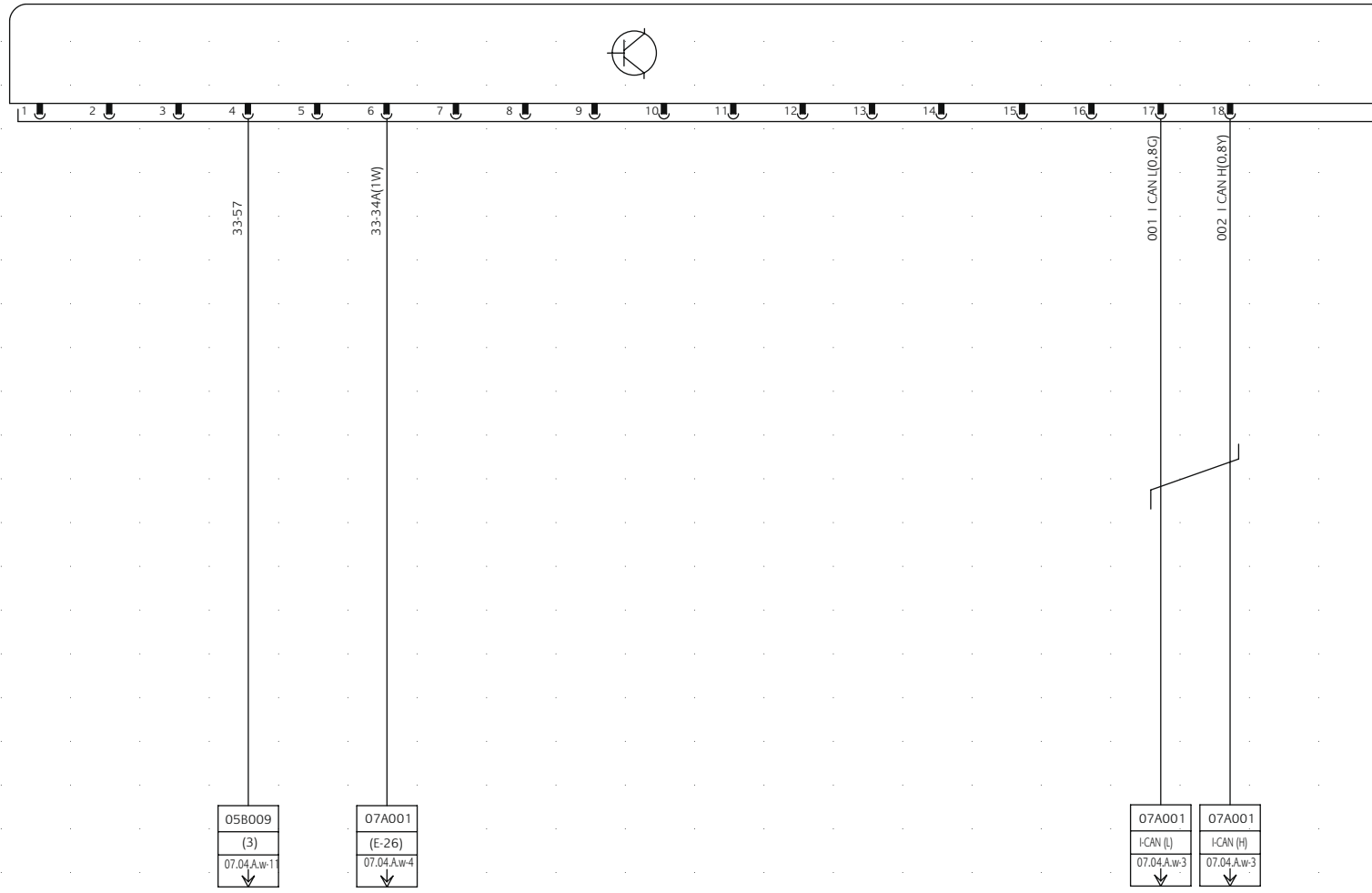
KL 15

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07A001 SOCKET K-1



KL 31

KL 58

KL 30

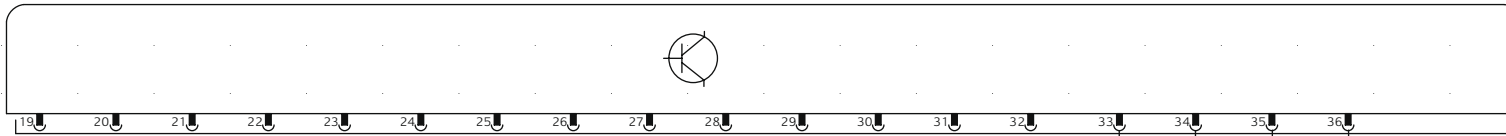
KL 15

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07A001 SOCKET K-2



E1C(1Bf)

E1D(1Bf)

13-02C(1R)

13-02D(1R)

07A001  
(E-35)  
07.04.A.w-4  
↓

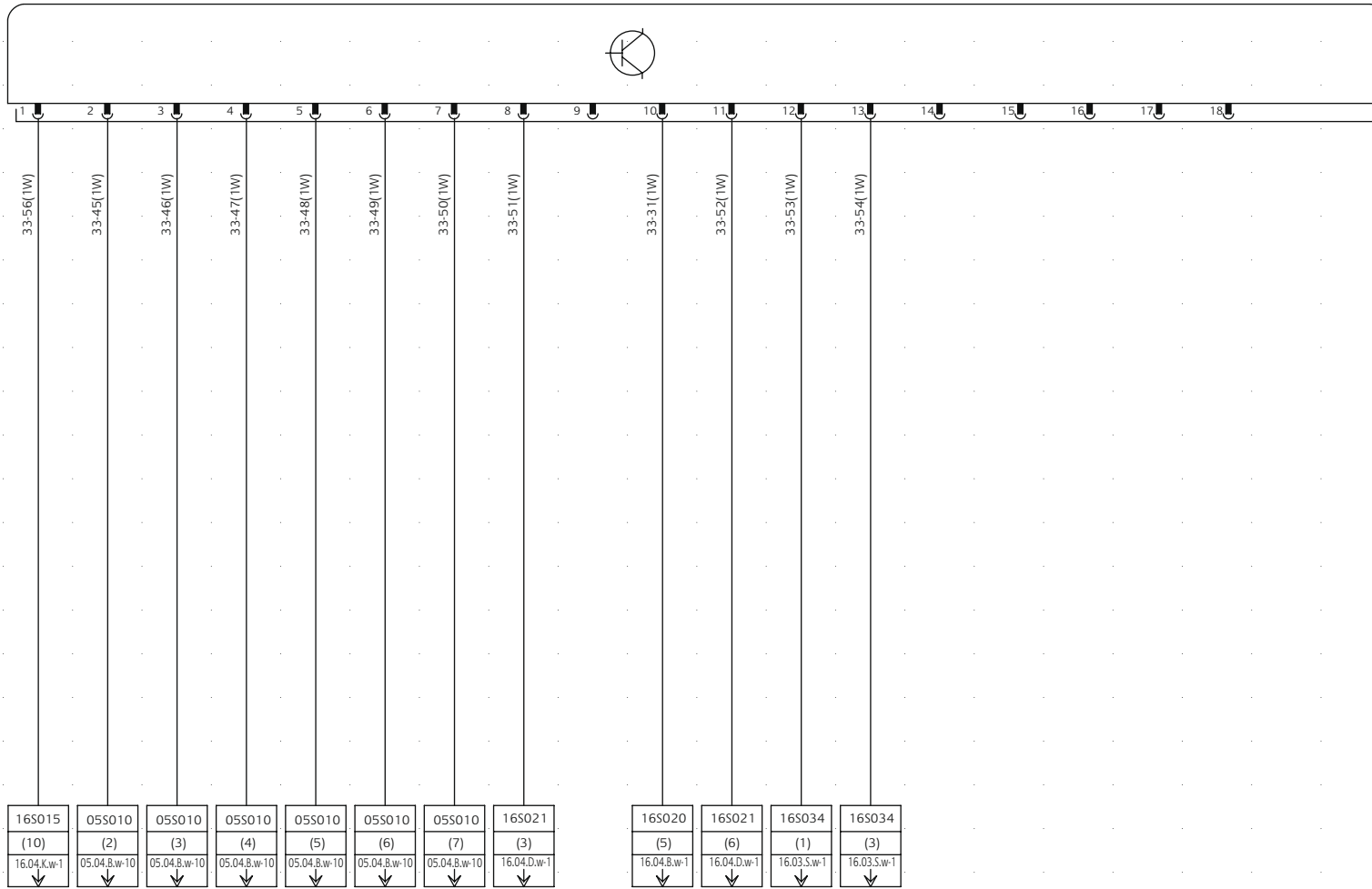
KL 31  
KL 58  
KL 30  
KL 15

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

07A001 SOCKET C-1



KL 31

KL 58

KL 30

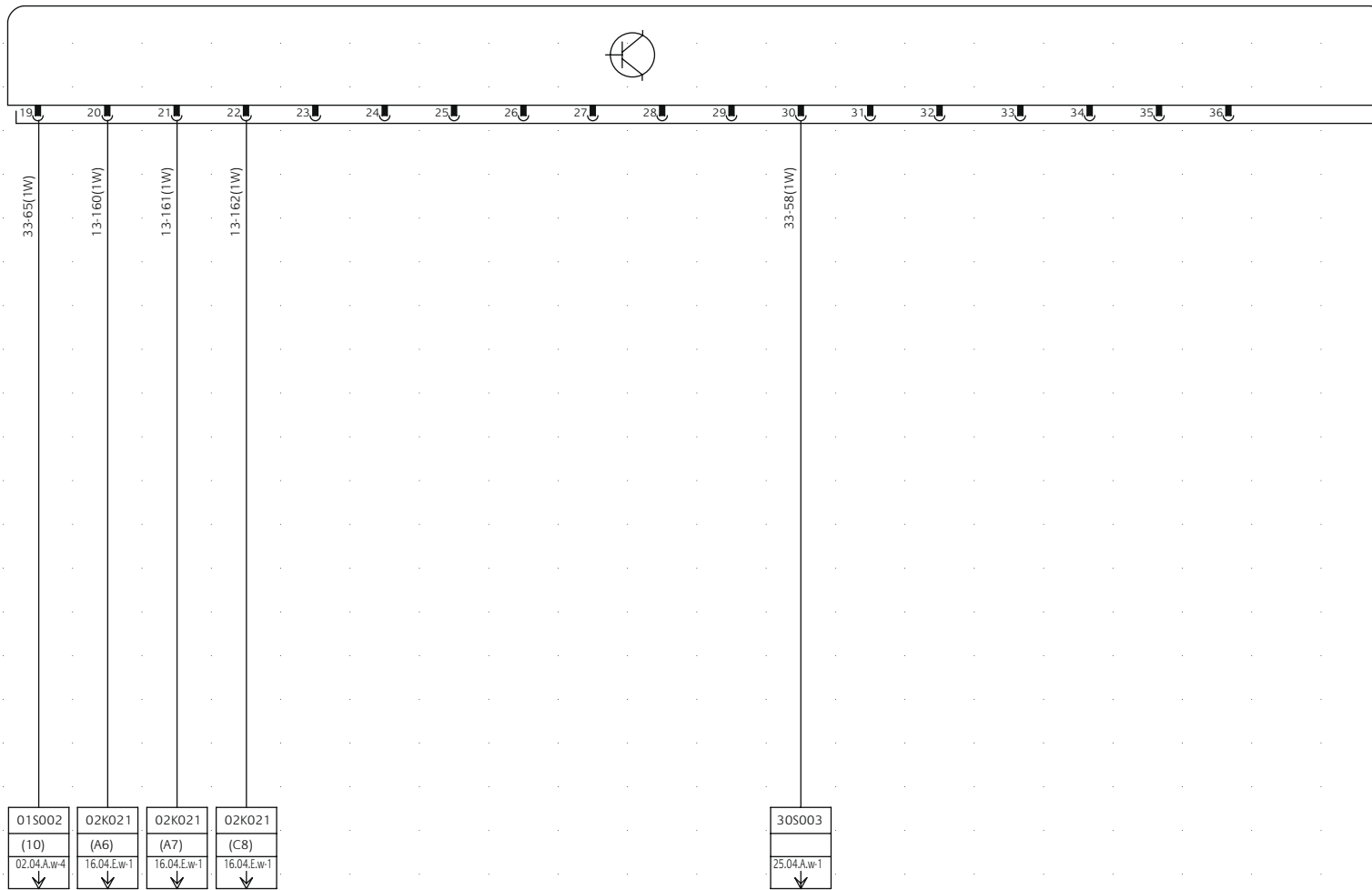
KL 15

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07A001 SOCKET C-2

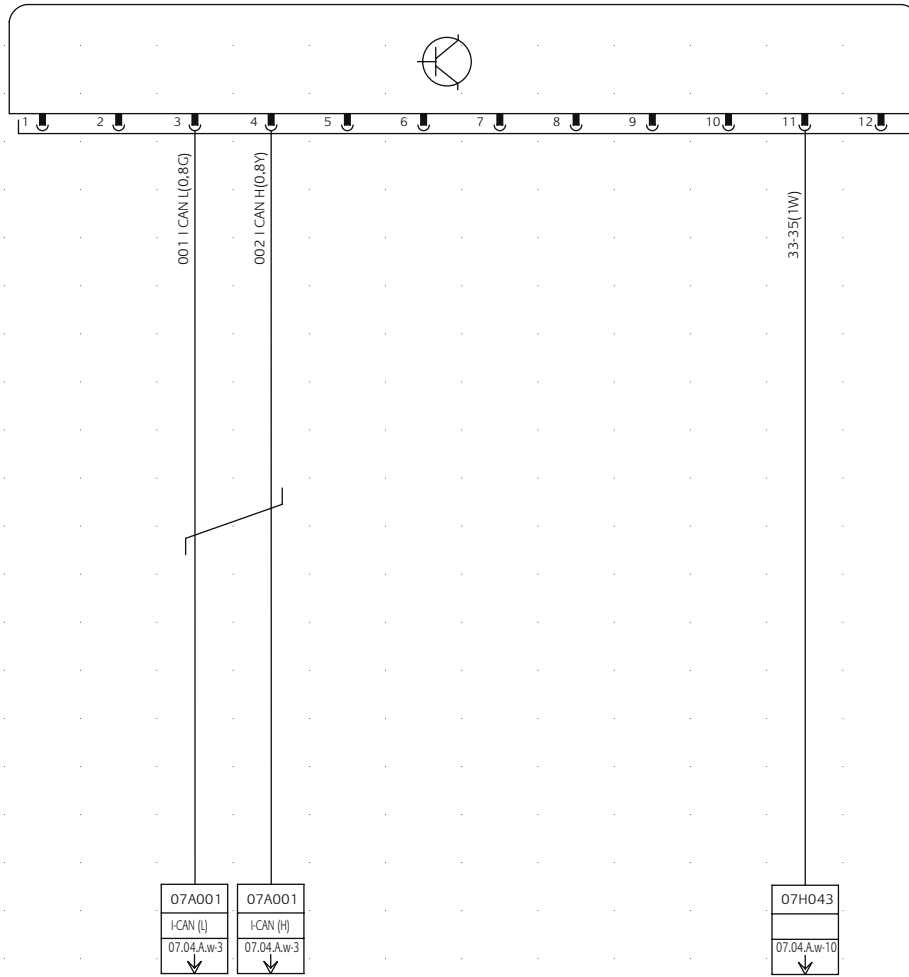


KL 31  
 KL 58  
 KL 30  
 KL 15

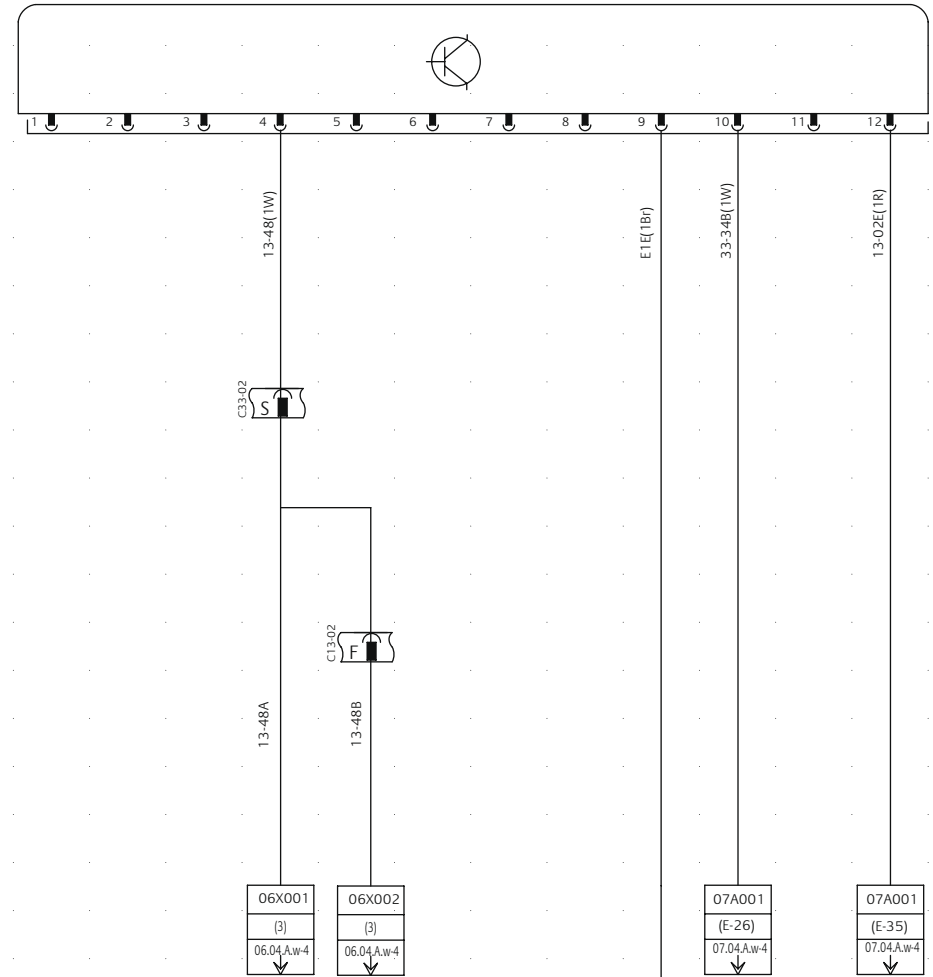


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07A001 SOCKET B



07A001 SOCKET F



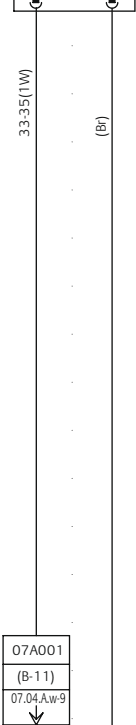
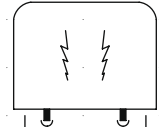
KL 31  
 KL 58  
 KL 30  
 KL 15

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07H043  
07A001 BUZZER

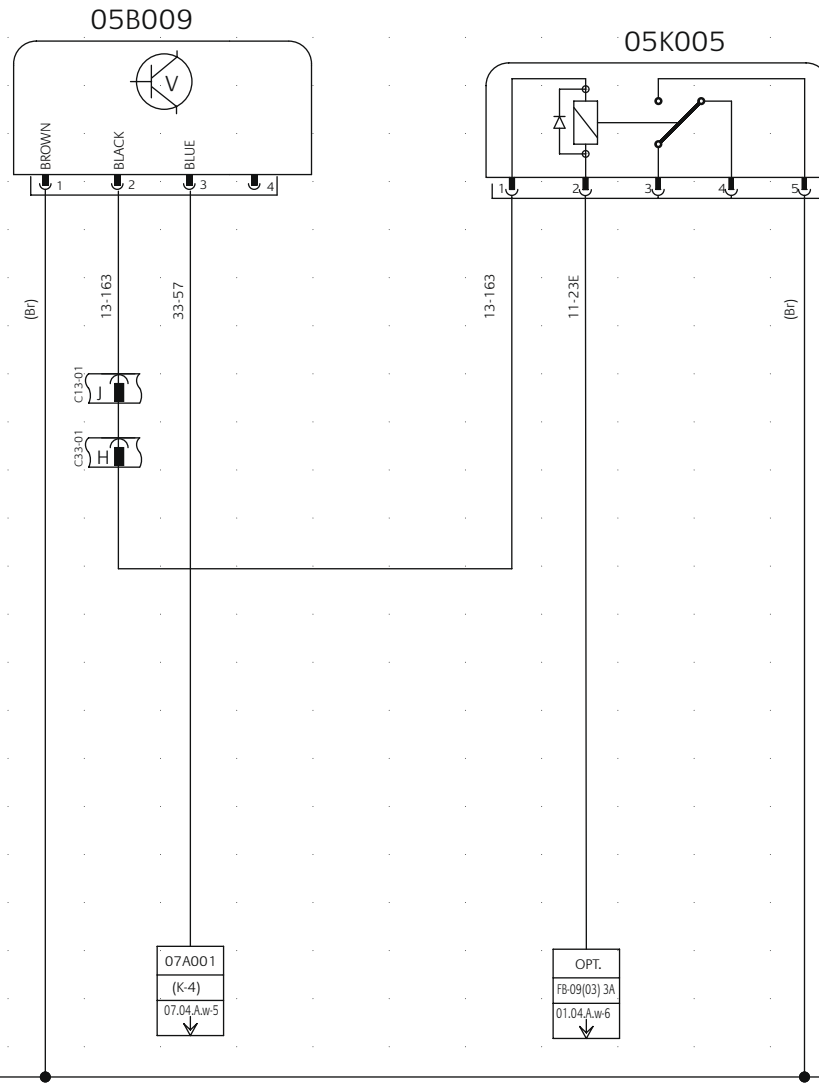


KL 31  
KL 58  
KL 30  
KL 15

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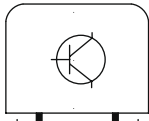
KL 31  
 KL 58  
 KL 30  
 KL 15

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07B005



14-80(LW)

(B1)

06A001
(B-1)
06.04.B.w2

KL 31  
KL 58  
KL 30  
KL 15

TEMSA

TS35

MOKI

Note:

07.04.A.List

SOCKET B/1 ( 12 PINS )			
PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
03	23-25	K CAN-L	
04	23-26	K CAN-H	
11	33-35		
12			

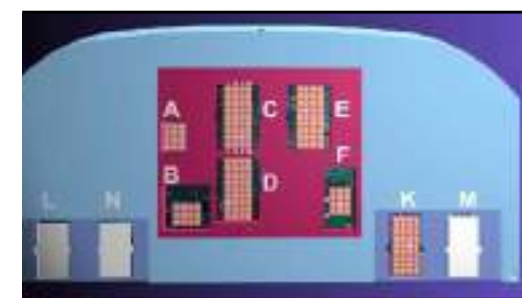
SOCKET C/1 ( 36 PINS )			
PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
01	33-56	INTERIOR SW	AB_INTERIOR__LIGHTING_SWITCH
02	33-45	Retarder Control Sw.	
03	33-46	Retarder Control Sw.	EB_Stalk-Switch_Retarder_Level_1
04	33-47	Retarder Control Sw.	EB_Stalk-Switch_Retarder_Level_2
05	33-48	Retarder Control Sw.	EB_Stalk-Switch_Retarder_Level_3
06	33-49	Retarder Control Sw.	EB_Stalk-Switch_Retarder_Level_4
07	33-50	Retarder Control Sw.	EB_Stalk-Switch_Retarder_Level_5
08	33-51	PARK/MAIN LIGHT SW	EB_Switch_Park_Lamp_(Level-1)
10	33-31	FRONT FOG LAMP SW	AB_FOG_FRONT_LED
11	33-52	PARK/MAIN LIGHT SW	EB_Switch_LowBeam (Park_Sw_Level-2)
12	33-53	DIMMER PARK SW	EB_Switch_Dimmer_Down_Info(Switch-Dimmer)
13	33-54	DIMMER PARK SW	EB_Switch_Dimmer_Up_Info(Switch-Dimmer)
16			EB_Switch_Lamp_Driver
17			EB_Button_Door_Rear_Control
19	33-65	MASTER IGNITION SW	AB_Switch-Led_Door_Middle
20	13-160	RIGT SIGNAL	EB_Right_Signal_Lamp_Problem
21	13-161	WIPER INTERVAL RELAY	EB_Left_Signal_Lamp_Problem
22	13-162	WIPER INTERVAL RELAY	
28			AB_Switch-Led_Convector_On
30	33-58	INVERTER CONTROL SW	

SOCKET F/1 ( 12 PINS )			
PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
04	13-48	ZR32 K-Line	
09	E4	Ground	
10	33-34	AUS Wake-Up for DMUX	
12	13-02E	Power (KL+30)	

SOCKET K/1 ( 36 PINS )			
PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
06	33-34A	AUS Wake-Up for DMUX	
17	001B	K CAN-L	
18	002B	K CAN-H	
33	E4	Ground	
34	E4	Ground	
35	13-02C	Power (KL+30)	
36	13-02D	Power (KL+30)	

SOCKET D/1 ( 36 PINS )			
PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
01	33-03	Hazard SwitchMUX Input	EB_HAZARD_SWITCH
02	13-47B	Ignition Switch Signal	
03	33-01	START STOP CONTROL SW	EB_Switch_Engine_Start_Sgn(Dash)
04	33-02	START STOP CONTROL SW	EB_Switch_Engine_Stop_Sgn(Dash)
05	-	-	-
06	33-07	CRUISE CON. SET+ / SET- SW.	EB_Stalk-Button_Cruise_AB_Switch-Led_Hazard Contro
07			
08	33-08	CRUISE CON. SET+ / SET- SW.	EB_Stalk-Button_Cruise_Control
09	33-04	HAZARD SW	AB_Switch-Led_Hazard
10	33-32	IGNITION SW.	EB_Ignition_Key_Accessories
11	33-33	EMERGENCY STOP SW.	EB_Emergency_Switch
12	33-09	CRUISE CONT. ON-OFF SW.	EB_Stalk-Button_Cruise_Control
13	33-11	READING LAMP SW.	EB_Switch_Reading_Lamp_Positi
14	33-12	READING LAMP SW.	EB_Switch_Reading_Lamp_Positio
15	33-13	INTERIOR SW	EB_Switch_Interior_Lighting_P
16	33-14	INTERIOR SW	EB_Switch_Interior_Lighting_Po
17	33-15	DRIVER LAMP SW.	EB_Switch_Driver_Lighting
18	33-06	FRONT DOOR CONTROL SW	AB_Switch-Led_Door_Front
19	33-05	FRONT DOOR CONTROL SW	EB_Button_Door_Front_Control
20			
21	33-16	AISLE LAMP SW.	EB_Switch_Aisle_Lighting
22	33-17	WC CONT. SW.	EB_WC_Power
23	33-19	MIRROR HEATING SW	EB_Switch_Mirror_Heating
24	33-21	CENTRAL LOCK CONT. SW.	EB_Switch_Central_Lock
25	33-22	STEERING CONTROL SW	EB_Switch_Steering_Column_Pos
26	33-24	KNEELING LIFTING SW	EB_Kneeling_Switch
27	33-10	CRUISE CONT. ON-OFF SW.	AB_Led-Cruise_Control_Switch_On
28			
29			
30	33-25	KNEELING-LIFTING SW	EB_Lifting_Switch
31	33-26	EGZOST BRAKE ON-OFF SW.	EB_Switch_Exhaust_Brake_On
32	33-28	EGZOST BRAKE SW.	EB_Switch_Exhaust_Brake_LevelActuator-2
33	33-29	EGZOST BRAKE SW.	EB_Switch_Exhaust_Brake_LevelActuator-1
34	33-30	FRONT FOG LAMP SW	EB_Switch_Lamp_Fog_Front
35	13-49B	ASR SW	EB_Switch_ASR_Disable
36	33-18	WC CONT. SW.	AB_Led_WC_Power_Control_Switch

SOCKET E/1 ( 36 PINS )			
PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
01	33-20	MIRROR HEATING SW	
02	33-23	KNEELING-LIFTING SW	
03			
04			
05			
06			
07			
08			
09			
10			
11			
12			
13			
14			
15			
16	001D	K CAN-L	
17	001A	K CAN-L	
18	002A	K CAN-H	
19	33-36	SIGNAL ARM SW.	EB_Stalk-Switch_Signal_Left
20	33-37	SIGNAL ARM SW.	EB_Stalk-Switch_Signal_Right
21	33-38	SIGNAL ARM SW.	EB_Button_HighBeam
22	33-39	SIGNAL ARM SW.	EB_Stalk-Button_Beam_High(Sel
23	33-40	SIGNAL ARM SW.	EB_Wiper_Interval_Sgn
24	33-60	DASHBOARD SW. PARK LAMPS.	EB_Switch_Handcapped_Lift_Cont
25			
26	33-34	AUS Wake-Up for DMUX	
27			
28	33-41	SIGNAL ARM SW.	EB_Wiper_Low_Level_Sgn
29	33-42	SIGNAL ARM SW.	EB_Wiper_Washer_Motor_Switch_Sign
30	33-43	SIGNAL ARM SW.	EB_Stalk-Button_Horn
31	33-44	SIGNAL ARM SW.	EB_Wiper_High_Level_Sgn
32	33-55	LIFT SW.	
33	Br	Ground	
34	Br	Ground	
35	13-02A	Power (KL+30)	
36	13-02B	Power (KL+30)	



# 08

# BRAKE SYSTEM

## Locations

Brake System ..... 08.04.A.I-1

## Electrical System Diagram

Brake Lining System..... 08.04.D.gw-1

Brake Lining Unit Pin Descriptin..... 08.04.D.gw-2

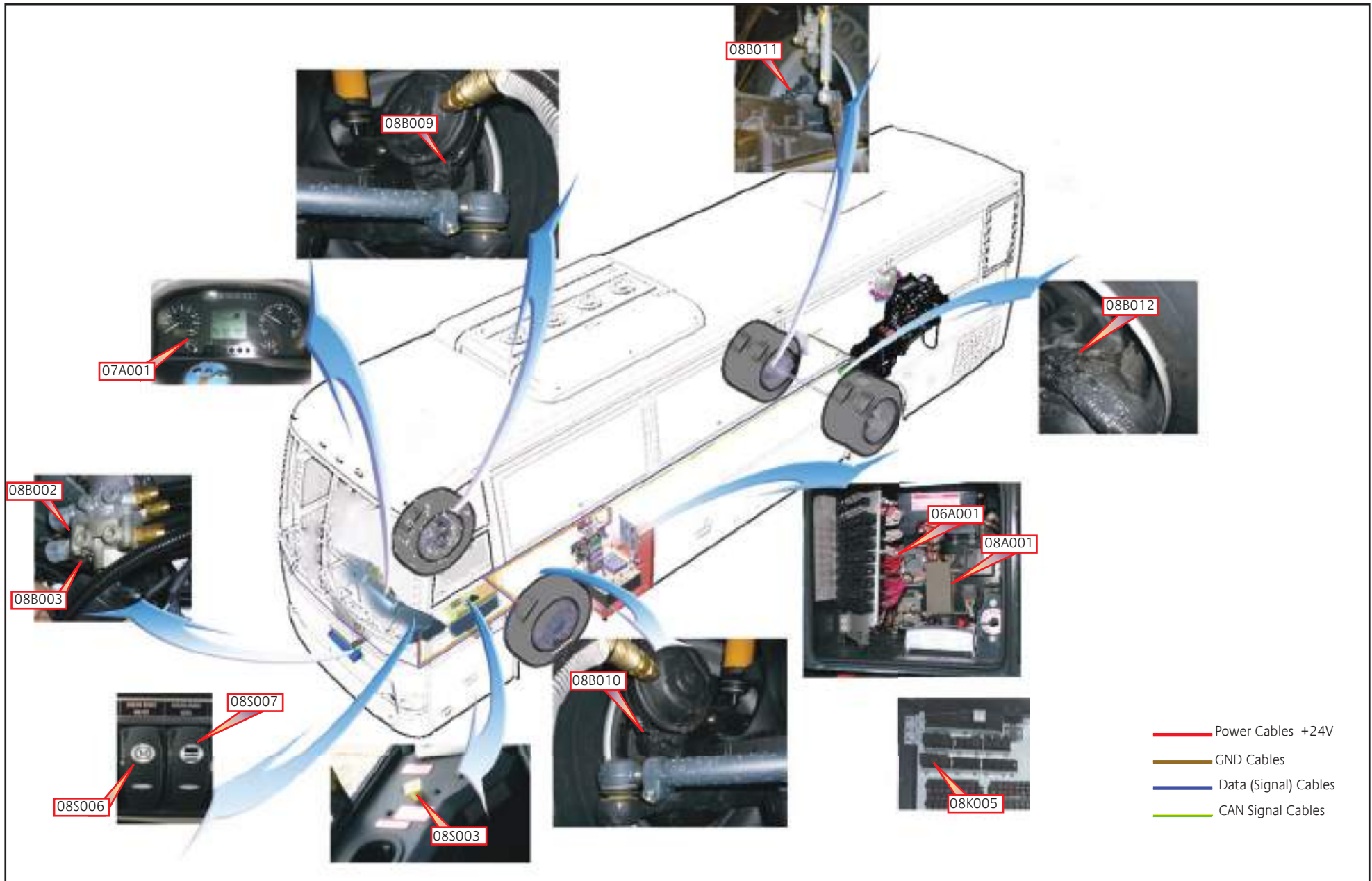
## Wiring Diagram

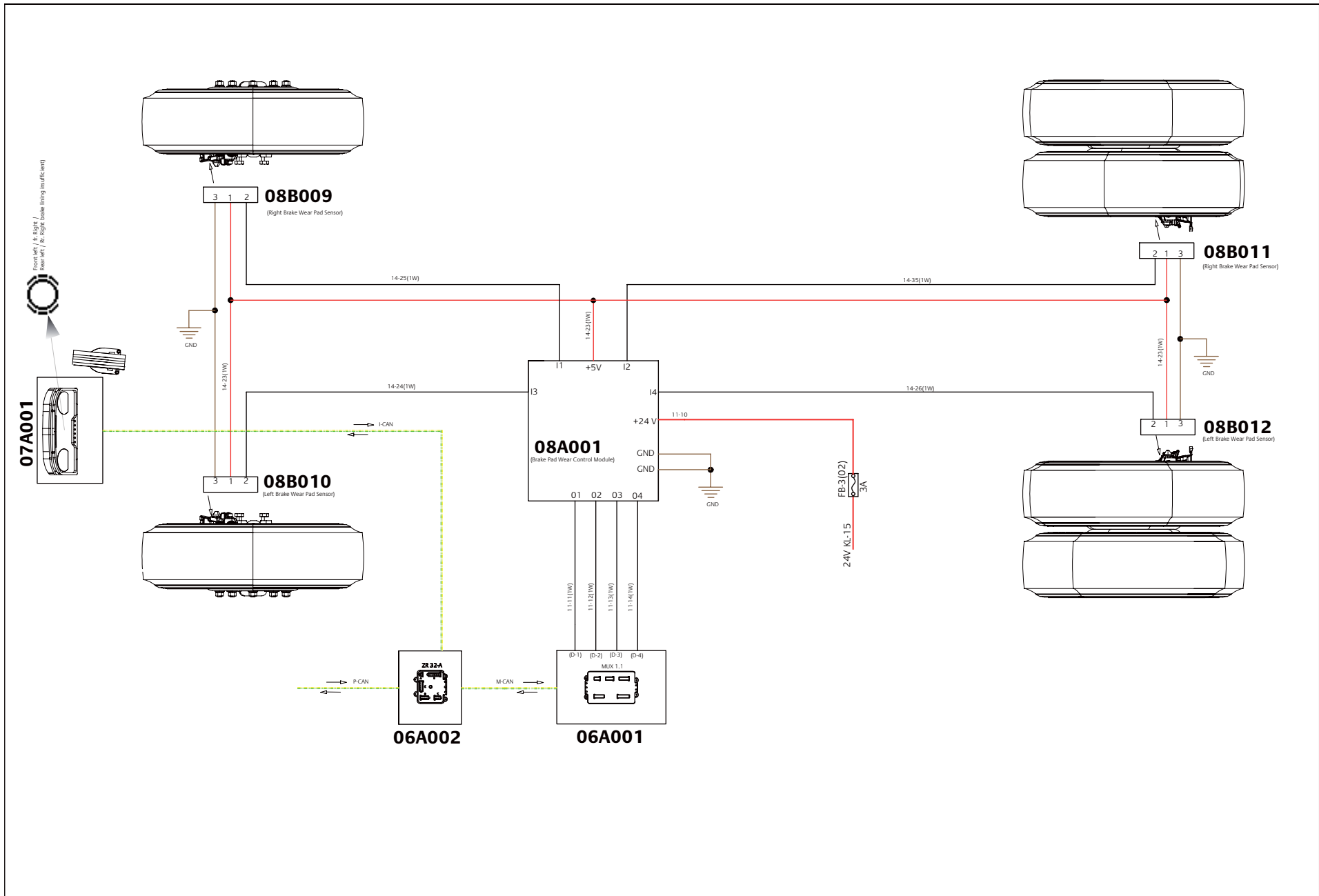
Park Brake System..... 08.04.A.w-1

Compress Brake System ..... 08.04.C.w-1

Brake Lining System..... 08.04.D.w-1

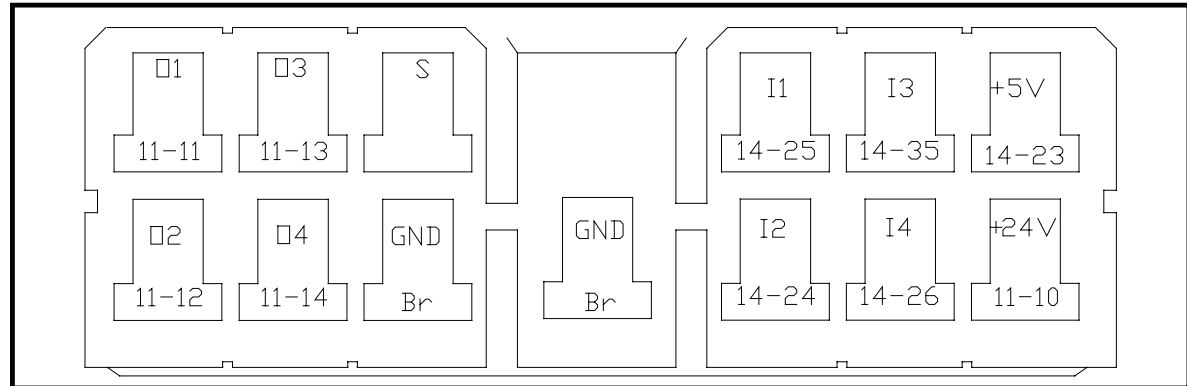
Foot Brake Sensors..... 08.04.E.w-1







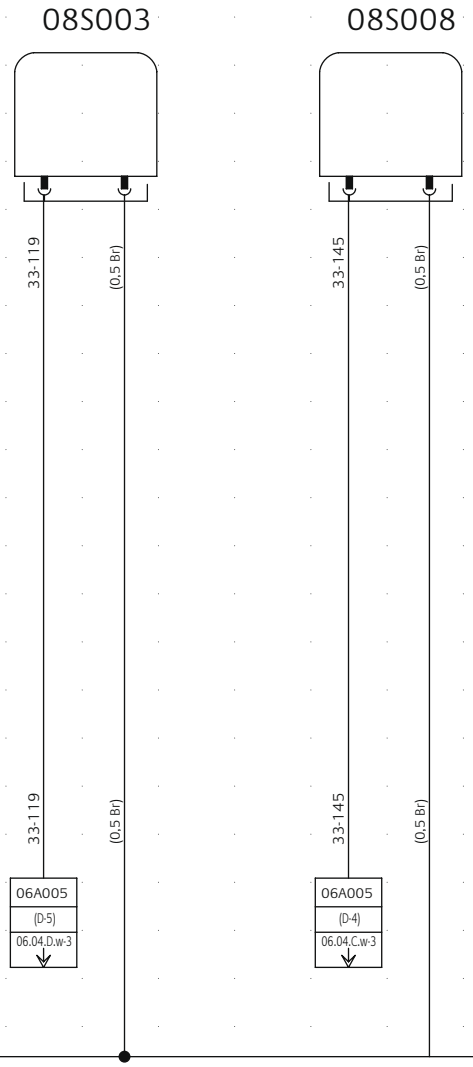
## Brake Lining Module



BRAKE LINING CONTROL MODULE		
PIN	CABLE	DESCRIPTION
O-1	11-11	Brake Lining Warning Signal ( Front Left )
O-2	11-12	Brake Lining Warning Signal ( Front Right )
O-3	11-13	Brake Lining Warning Signal ( Rear Left )
O-4	11-14	Brake Lining Warning Signal ( Rear Right )
S		
GND	Br	Ground
GND	Br	Ground
I-1	11-25	Brake Lining Sensor Input ( Front Left )
I-2	11-24	Brake Lining Sensor Input ( Front Right )
I-3	11-35	Brake Lining Sensor Input ( Rear Left )
I-4	11-26	Brake Lining Sensor Input ( Rear Right )
5 V	14-23	Sesnsors Power
24 V	11-10	Module Power ( KL+30 )





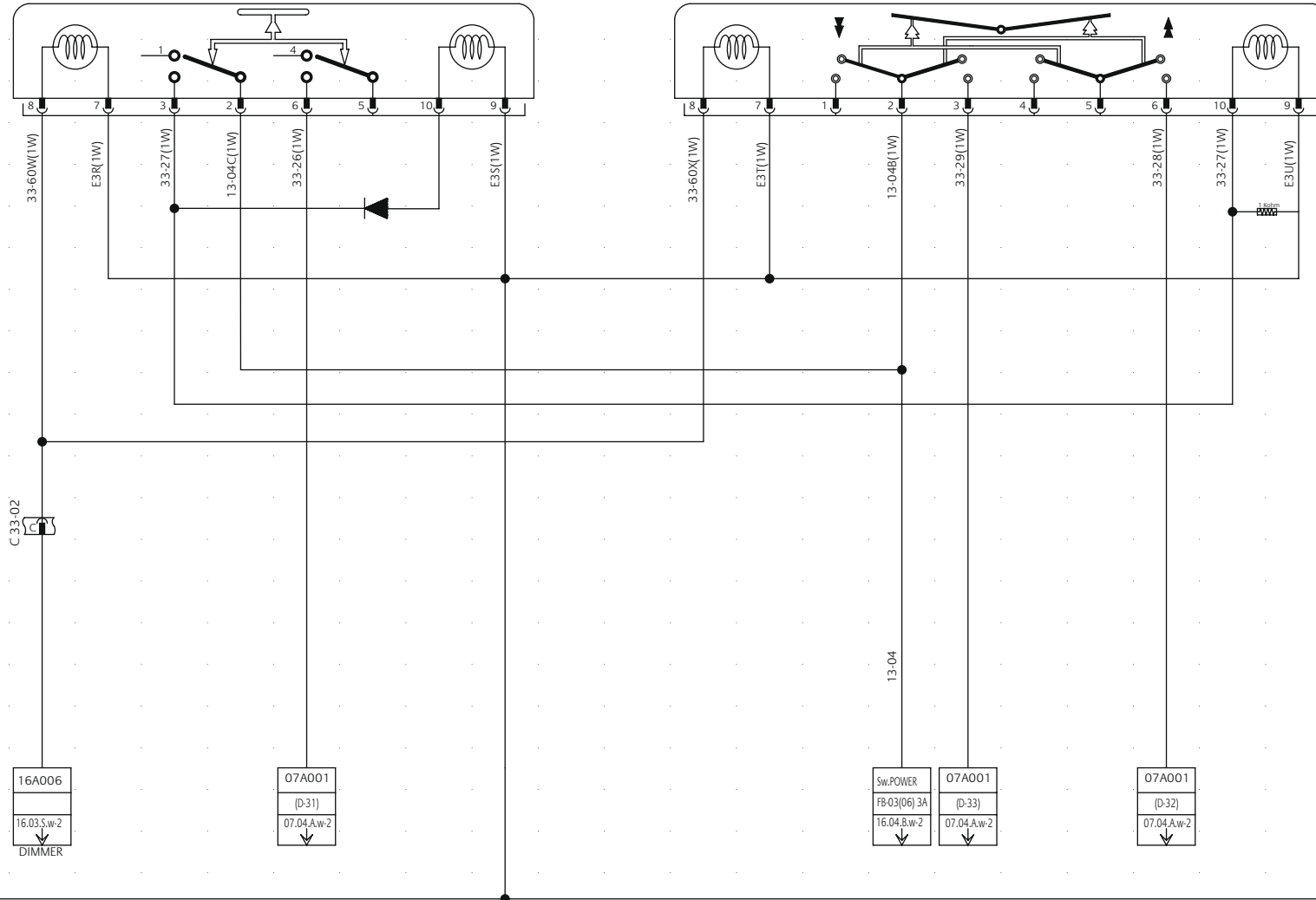


KL 31  
 KL 58  
 KL 30  
 KL 15



08S006

08S007



KL 31  
 KL 58  
 KL 30  
 KL 15



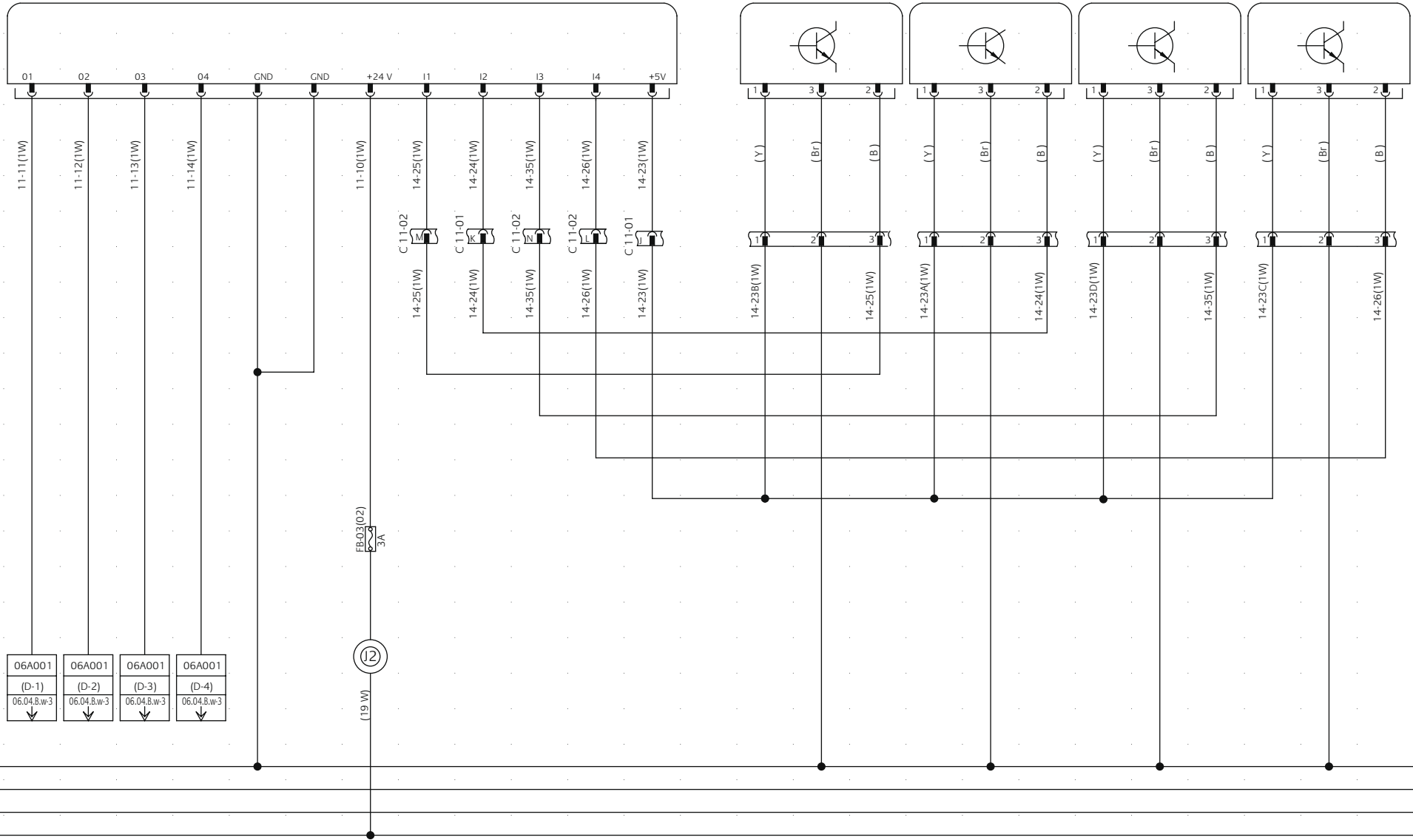
08A001

08B009

08B010

08B011

08B012

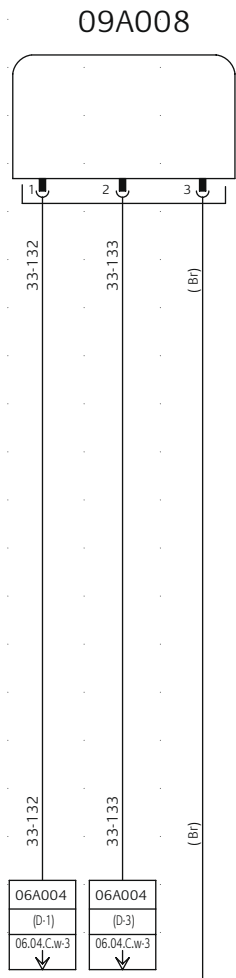












KL 31  
 KL 58  
 KL 30  
 KL 15



# 09

## ABS & ASR SYSTEM

### Locations

ABS & ASR System..... 09.04.A.l-1

### Electrical System Diagram

ABS & ASR System..... 09.04.A.gw-1

ABS & ASR ECU Pin Description..... 09.04.A.gw-2

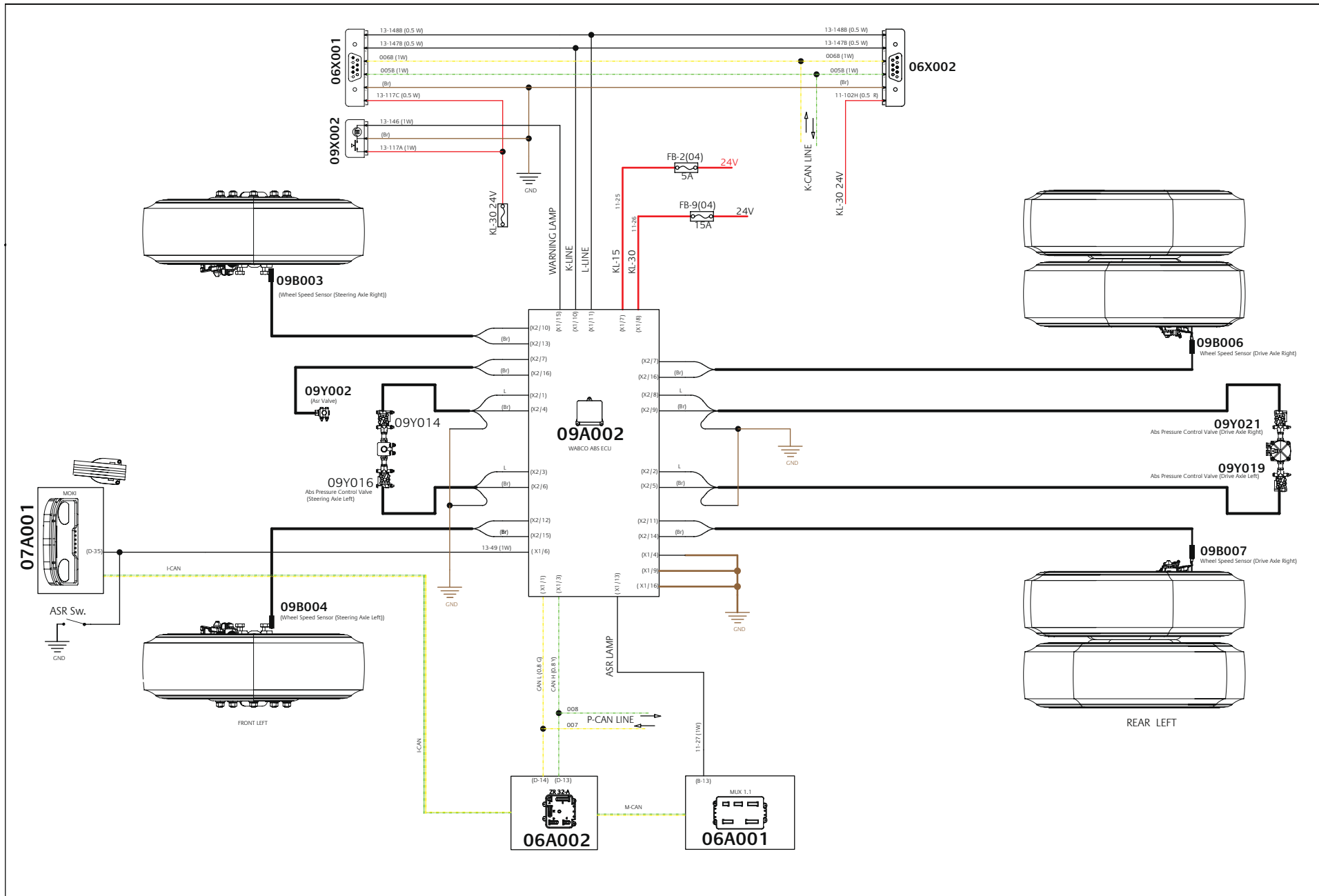
### Wiring Diagram

ABS & ASR System..... 09.04.A.w-1

### General Information

Diagnostic and Fault Codes ..... 09.04.A.fc-1





TS35

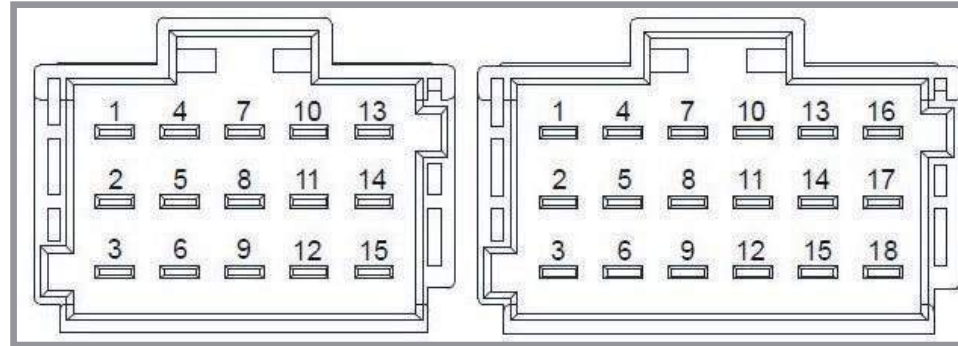
Note:

TEMSA

# WABCO ABS ECU



X 1



X 2

SOCKET X1 ( 15 PINS )		
PIN	CABLE	DESCRIPTION
1	126-01	P CAN - L
2	11-53	Trailer Warning Lamp
3	126-02	P CAN - H
4	E 13	Ground
5		
6	13-27	ASR On/Off Switch
7	11-55	ECU Power (KL+15)
8	11-07	Valves Power (KL+30)
9	E 13	Ground (Valves)
10	11-04	K-Line
11	11-05	K-Line
12		
13	11-51	ASR Indicator Lamp
14	11-52	DBR Power (KL+15)
15	11-50	ABS Indicator Lamp

SOCKET X2 ( 18 PINS )		
PIN	CABLE	DESCRIPTION
1	Br	Front Right ABS Valve Ground
2	Br	Rear Left ABS Valve Ground
3	Br	Front Left ABS Valve Ground
4	L	Front Right ABS Valve Signal
5	L	Rear Left ABS Valve Signal
6	L	Front Left ABS Valve Signal
7	Br	ASR Valve Ground
8	Br	Rear Right ABS Valve Ground
9	L	Rear Right ABS Valve Signal
10	B	Front Right ABS Sensor Signal
11	B	Rear Left ABS Sensor Signal
12	B	Front Left ABS Sensor Signal
13	Br	Front Right ABS Sensor Ground
14	Br	Rear Left ABS Sensor Ground
15	Br	Front Left ABS Sensor Ground
16	B	ASR Valve Signal
17	B	Rear Right ABS Sensor Signal
18	Br	Rear Right ABS Sensor Ground

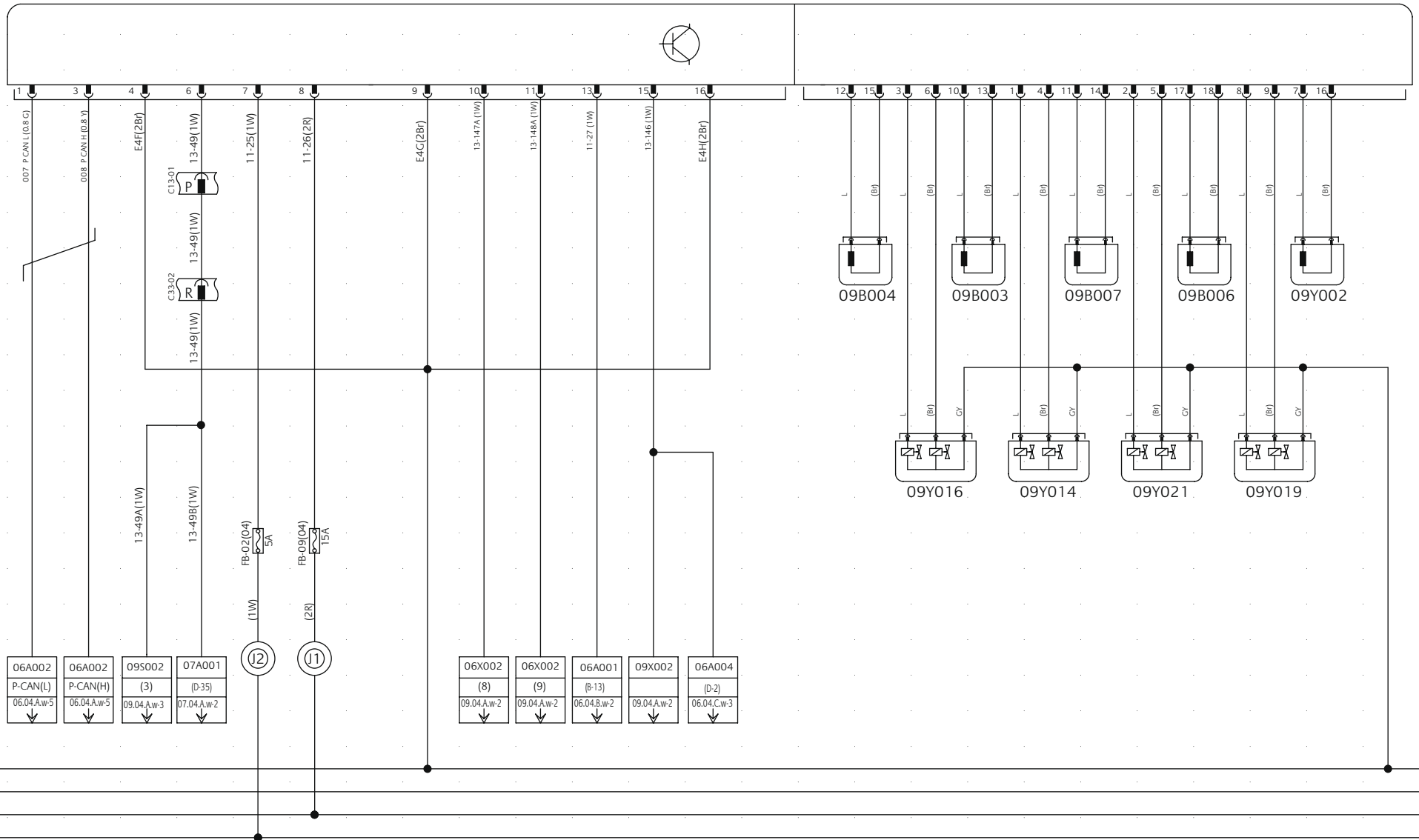
Code	Part No	Türkçe	English	Spanish	Français	Italiano
09A002	11	Abs Kumanda Cihazı (Wabco)	Abs Electronic Control Module (Wabco)	Módulo de Control Electrónico de ABS (WABCO)	Calculateur Système Antiblocage Abs	Modulo Di Controllo Elettronica Abs (Wabco)
07A001	9	Kombi Gösterge	Instrument Cluster	Grupo de Instrumentos	Combiné D'Instruments	Gruppo Strumentazione
06X001	9,10	J1939/J1587 Can Arıza Teşhis Prizi	Can J1939/J1587 Diagnostic Socket	Toma de Conexión para Herramientas de Diagnóstico del Cuadro de Mandos J1939/J1587	Prise Diagnostic Can J1939/J1587	Presa Diagnostica Can J1939/J1587
06A001	11	Mux 1.1	Mux 1.1	Multiplexor 1.1	Mux 1,1	Mux 1,1
09X002	12	Mut-lii Diyagnoz Cihazı Soketi	Multiuse Tester Connector	Conector del Tester Multiusos	Connecteur Tester Multifonction	Connettore Tester Multiuso
09B004	16	Ön Aks Sol Devir Sayısı Sensörü	Wheel Speed Sensor (Steering Axle Left)	Sensor de Velocidad de la Rueda (Eje de Dirección Izquierdo)	Capteur Vitesse De Rotation Roue Av Ga	Sensore Velocita' Ruota (Assale Sinistro Sterzo)
09B003	18	Ön Aks Sağ Devir Sayısı Sensörü	Wheel Speed Sensor (Steering Axle Right)	Sensor de Velocidad de la Rueda (Eje de Dirección Derecho)	Capteur Vitesse De Rotation Roue Av Dr	Sensore Velocita' Ruota (Assale Destro Sterzo)
09B007	20	Tahrikli Aks Sol Devir Sayısı Sensörü	Wheel Speed Sensor ( Drive Axle Left)	Sensor de Velocidad de la Rueda (Eje de Tracción Izquierdo)	Capteur Vitesse De Rotation Aa Ga	Sensore Velocita' Ruota (Assale Sinistro Trazione)
09B006	22	Tahrikli Aks Sağ Devir Sayısı Sensörü	Wheel Speed Sensor (Drive Axle Right)	Sensor de Velocidad de la Rueda (Eje de Tracción Derecho)	Capteur Vitesse De Rotation Aa Dr	Sensore Velocita' Ruota (Assale Destro Trazione)
09Y002	24	Asr Valfi	Asr Valve	Válvula Asr	Valve Commutation Régulation Anti-Patinage Asr	Valvola Asr
09Y016	17	Ön Aks Sol Basınç Kumanda Valfi	Ebs Pressure Control Valve (Steering Axle Left)	Válvula de Control de Presión de EBS (Eje de Dirección Izquierdo)	Valve Commande Pression Essieu Avg	Valvola Controllo Pressione Ebs (Assale Sinistro Sterzo)
09Y014	19	Ön Aks Sağ Basınç Kumanda Valfi	Ebs Pressure Control Valve (Steering Axle Right)	Válvula de Control de Presión de EBS (Eje de Dirección Derecho)	Valve Commande Pression Essieu Avd	Valvola Controllo Pressione Ebs (Assale Destro Sterzo)
09Y021	21	Tahrikli Aks Basınç Kumanda Valfi, Sol	Ebs Pressure Control Valve (Drive Axle Left)	Válvula de Control de Presión de EBS (Eje de Tracción Izquierdo)	Valve Commande De Pression Aa Ga	Valvola Controllo Pressione Ebs (Assale Sinistro Sterzo)
09Y019	23	Tahrikli Aks Basınç Kumanda Valfi, Sağ	Abs Pressure Control Valve (Drive Axle Right)	Válvula de Control de Presión de ABS (Eje de Tracción Derecho)	Soupape De Commande Pression Abs (Essieu Directeur Droite)	Valvola Controllo Pressione Abs (Assale Destro Trazione)



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

09A002 (X1)

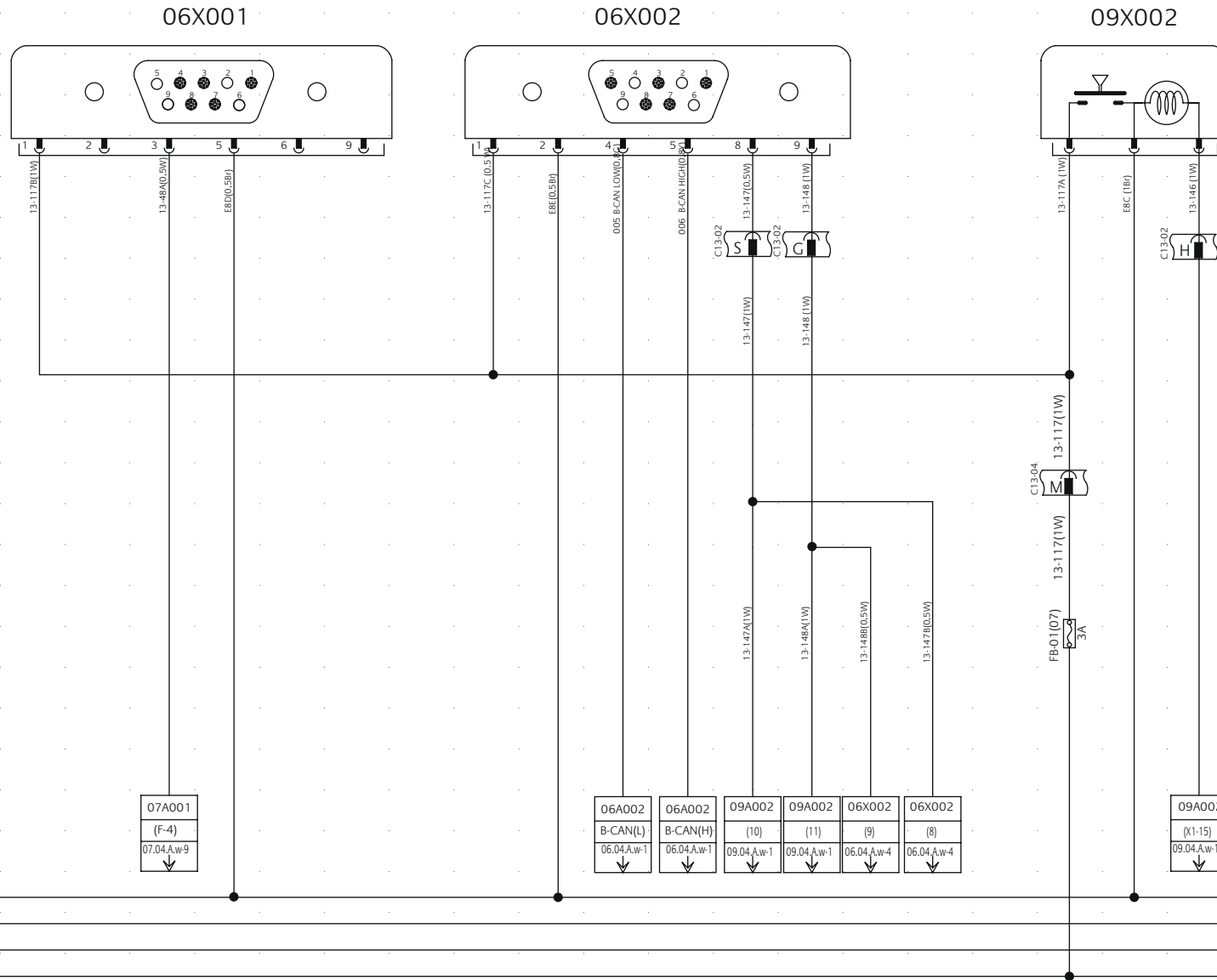
09A002 (X2)



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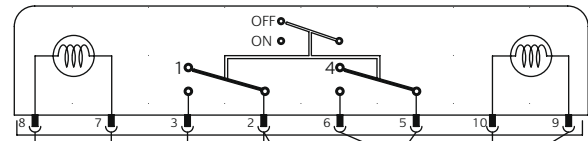
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25







09S002



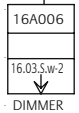
33-60T(1W)

E3K(1Br)

13-49A(1W)

E3L(1Br)

13-04Y(1R)

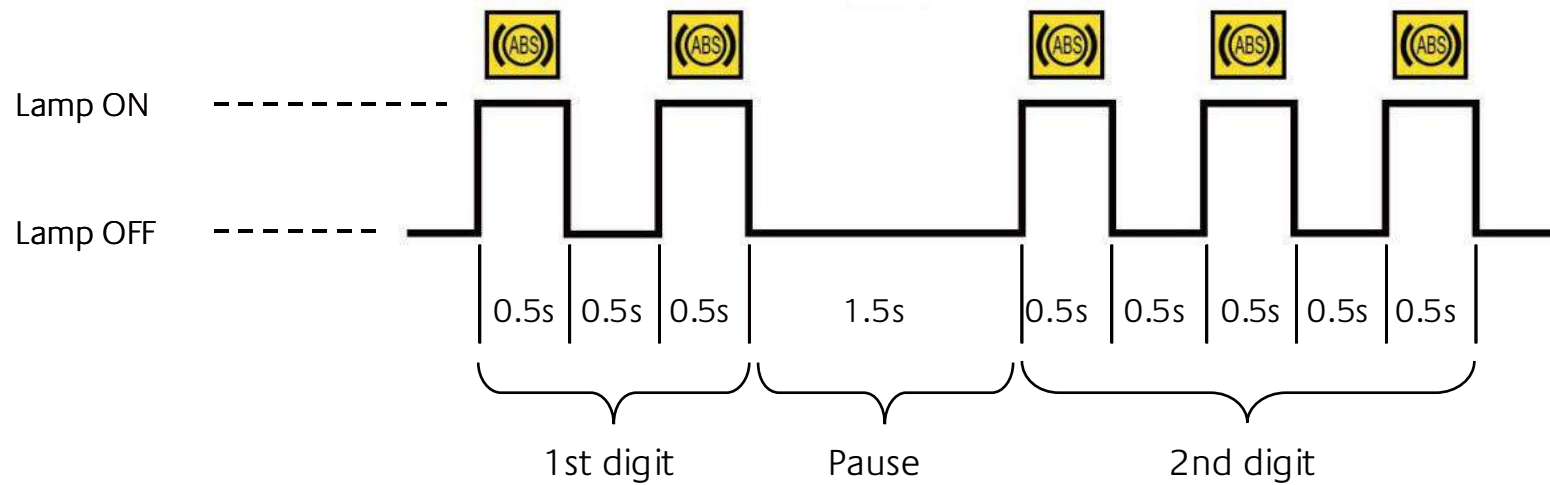


KL 31  
 KL 58  
 KL 30  
 KL 15

To access the Fault Codes :

Press the ABS blink code button and release.

Count the number of flashes of the ABS warning lamp



These will be in two groups representing two digits :

- 1st digit = number of flashes in the first group
- followed by a pause then
- 2nd digit = number of flashes in the second group

# WABCO – ABS / ASR Fault Codes

**WABCO**

SIDFMI ABS-E all

VDC-PD-D T.Munko/G.Ruhnau

SID, SPN	FMI	Blink Code	FAULT	Basic, Universal pin/plug	Fault-indication	ABS-E with ESC/RSC/A (Universal) COMMENT (REACTION)	Cause	Action
<b>Wheel Sensor left front</b>								
1	1	3 + 2	air gap	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	air gap too large, sensor output voltage too low but just exceeds trigger level	Check bearing play, polewheel run out, push sensor to polewheel.
1	2	5 + 2	incorrect tyre	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	such proportion of tyre diameter/ pole wheel teeth number that wheel speed difference within front axle > 10 % or difference within wheels of different axles > 19 % . Pneus or number of polewheel teeth are different.	Check wheel circumference and number of polewheel teeth
1	3	4 + 2	shorted to UBATT	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	DC voltage detected. Short circuit or impedance to battery voltage.	Check sensor wiring..
1	4	4 + 2	shorted to ground	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Short circuit to ground is detected.	Check Sensor wiring, replace Sensor if necessary.
1	5	4 + 2	open circuit	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Open circuit is detected	Check Sensor wiring, replace Sensor if necessary.
1	6	4 + 2	short circuit	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Short circuit between sensorwires IG/IGM is detected	Check Sensor wiring, replace Sensor if necessary.
1	7	6 + 2	incorrect pole wheel	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Cyclic drop out detected at speed higher than 10 km/h. Several wheel revolution necessary.	Check polewheel for damages / missing teeth. Use WABCO sensor probe. Replace polewheel if not checked o.k. If additional airgap faults are stored, adjust airgap.
1	8	3 + 2	slip	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	16 sec. slip duration detected.	Adjust airgap. Other possible reasons: gear engaged at slippery conditions or modulator valve does not work correctly.
1	9	5 + 2	wires mismatched	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Wire IG or IGM of another sensor is detected.	Check for mismatch-fault of another sensor. Correct harness.
1	10	3 + 2	speed drop-out	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Temporarily loss of wheel speed signal. Air gap too large, sensor voltage exceeds trigger level at too late.	Adjust airgap. Check sensor wiring and connectors for intermittent contact. Turn the wheel and read out amplitudes of sensor signals and compare with required values.
1	11	5 + 2	abnormal speed (chatter)	12;15/18	WL	ABS: partial disabled ASR, RSC/A: disabled with standard parameterset not as fault interpreted. FMI 11 not stored.	Brake squeezes or chatters.	NO repair instruction. Check sensor wiring and connectors for intermittent contact. Check toothed wheel for damages. Read out amplitudes of sensor signals and compare with required values.
1	12	5 + 2	frequency too high	12;15/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	non plausible sensor frequency measured.	Check sensor wiring and connectors for intermittent contact. Check whether brake squeezes. Change ELECTRONIC if fault occurrence repeats without brake squeezing.
1	13	no	Brake performance fl, rr, rrl				Brake Performance Mornit condition exeeded	Check brakes of all wheels

# WABCO – ABS / ASR Fault Codes

**WABCO**

**SIDFMI ABS-E all**

VDC-PD-D T.Munko/G.Ruhnau

SID, SPN	FMI	Blink Code	FAULT	Basic, Universal pin/plug	Fault-indication	ABS-E with ESC/RSC/A (Universal) COMMENT (REACTION)	Cause	Action
<b>Wheel Sensor right front</b>								
2	1	3 + 1	air gap	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	air gap too large, sensor output voltage too low but just exceeds trigger level	Check bearing play, polewheel run out, push sensor to polewheel.
2	2	5 + 1	incorrect tyre	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	such proportion of tyre diameter/ pole wheel teeth number that wheel speed difference within front axle > 10 % or difference within wheels of different axles > 19 % . Pneus or number of polewheel teeth are different.	Check wheel circumference and number of polewheel teeth
2	3	4 + 1	shorted to UBATT	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	DC voltage detected. Short circuit or impedance to battery voltage.	Check sensor wiring..
2	4	4 + 1	shorted to ground	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Short circuit to ground is detected.	Check Sensor wiring, replace Sensor if necessary.
2	5	4 + 1	open circuit	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Open circuit is detected	Check Sensor wiring, replace Sensor if necessary.
2	6	4 + 1	short circuit	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Short circuit between sensorwires IG/IGM is detected	Check Sensor wiring, replace Sensor if necessary.
2	7	6 + 1	incorrect pole wheel	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Cyclic drop out detected at speed higher than 10 km/h. Several wheel revolution necessary.	Check polewheel for damages / missing teeth. Use WABCO sensor probe. Replace polewheel if not checked o.k. If additional airgap faults are stored, adjust airgap.
2	8	3 + 1	slip	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	16 sec. slip duration detected.	Adjust airgap. Other possible reasons: gear engaged at slippery conditions or modulator valve does not work correctly.
2	9	5 + 1	wires mismatched	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Wire IG or IGM of another sensor is detected.	Check for mismatch-fault of another sensor. Correct harness.
2	10	3 + 1	speed drop-out	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	Temporarily loss of wheel speed signal. Air gap too large, sensor voltage exceeds trigger level at too late.	Adjust airgap. Check sensor wiring and connectors for intermittent contact. Turn the wheel and read out amplitudes of sensor signals and compare with required values.
2	11	5 + 1	abnormal speed	10;13/18	WL	ABS: partial disabled ASR, RSC/A: disabled with standard parameterset not as fault interpreted. FMI 11 not stored.	Brake squeezes or chatters.	NO repair instruction. Check sensor wiring and connectors for intermittent contact. Check toothed wheel for damages. Read out amplitudes of sensor signals and compare with required values.
2	12	5 + 1	frequency too high	10;13/18	WL	ABS: wheel disabled ASR, RSC/A: disabled	non plausible sensor frequency measured.	Check sensor wiring and connectors for intermittent contact. Change ELECTRONIC if fault occurrence repeats.



# WABCO – ABS / ASR Fault Codes

**WABCO**

SIDFMI ABS-E all

VDC-PD-D T.Munko/G.Ruhnau

SID, SPN	FMI	Blink Code	FAULT	Basic, Universal pin/plug	Fault-indication	ABS-E with ESC/RSC/A (Universal) COMMENT (REACTION)	Cause	Action
<b>Wheel Sensor left rear</b>								
3	1	3 + 4	air gap	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	air gap too large, sensor output voltage too low but just exceeds trigger level	Check bearing play, polewheel run out, push sensor to polewheel.
3	2	5 + 4	incorrect tyre	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	such proportion of tyre diameter/ pole wheel teeth number that wheel speed difference within front axle > 10 % or difference within wheels of different axles > 19 % . Pneus or number of polewheel teeth are different.	Check wheel circumference and number of polewheel teeth
3	3	4 + 4	shorted to UBATT	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	DC voltage detected. Short circuit or impedance to battery voltage.	Check sensor wiring..
3	4	4 + 4	shorted to ground	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Short circuit to ground is detected.	Check Sensor wiring, replace Sensor if necessary.
3	5	4 + 4	open circuit	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Open circuit is detected	Check Sensor wiring, replace Sensor if necessary.
3	6	4 + 4	short circuit	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Short circuit between sensorwires IG/IGM is detected	Check Sensor wiring, replace Sensor if necessary.
3	7	6 + 4	incorrect pole wheel	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Cyclic drop out detected at speed higher than 10 km/h. Several wheel revolution necessary.	Check polewheel for damages / missing teeth. Use WABCO sensor probe. Replace polewheel if not checked o.k. If additional airgap faults are stored, adjust airgap.
3	8	3 + 4	slip	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	16 sec. slip duration detected.	Adjust airgap. Other possible reasons: gear engaged at slippery conditions or modulator valve does not work correctly.
3	9	5 + 4	wires mismatched	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Wire IG or IGM of another sensor is detected.	Check for mismatch-fault of another sensor. Correct harness.
3	10	3 + 4	speed drop-out	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Temporarily loss of wheel speed signal. Air gap too large, sensor voltage exceeds trigger level at too late.	Adjust airgap. Check sensor wiring and connectors for intermittent contact. Turn the wheel and read out amplitudes of sensor signals and compare with required values.
3	11	5 + 4	abnormal speed	11;14/18	WL	ABS: partial disabled ASR, RSC/A: disabled SMR: disabled with standard parameterset not as fault interpreted. FMI 11 not stored.	Brake squeezes or chatters.	NO repair instruction. Check sensor wiring and connectors for intermittent contact. Check toothed wheel for damages. Read out amplitudes of sensor signals and compare with required values.
3	12	5 + 4	frequency too high	11;14/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	non plausible sensor frequency measured.	Check sensor wiring and connectors for intermittent contact. Change ELECTRONIC if fault occurrence repeats.
3	13	n0	Brake performance fr, rl, rrr				Brake Performance Mornit condition exeeded	Check brakes of all wheels

# WABCO – ABS / ASR Fault Codes

**WABCO**

SIDFMI ABS-E all

VDC-PD-D T.Munko/G.Ruhnau

SID, SPN	FMI	Blink Code	FAULT	Basic, Universal pin/plug	Fault-indication	ABS-E with ESC/RSC/A (Universal) COMMENT (REACTION)	Cause	Action
<b>Wheel Sensor right rear</b>								
4	1	3 + 3	air gap	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	air gap too large, sensor output voltage too low but just exceeds trigger level	Check bearing play, polewheel run out, push sensor to polewheel.
4	2	5 + 3	incorrect tyre	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	such proportion of tyre diameter/ pole wheel teeth number that wheel speed difference within front axle > 10 % or difference within wheels of different axles > 19 % . Pneus or number of polewheel teeth are different.	Check wheel circumference and number of polewheel teeth
4	3	4 + 3	shorted to UBATT	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	DC voltage detected. Short circuit or impedance to battery voltage.	Check sensor wiring..
4	4	4 + 3	shorted to ground	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Short circuit to ground is detected.	Check Sensor wiring, replace Sensor if necessary.
4	5	4 + 3	open circuit	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Open circuit is detected	Check Sensor wiring, replace Sensor if necessary.
4	6	4 + 3	short circuit	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Short circuit between sensorwires IG/IGM is detected	Check Sensor wiring, replace Sensor if necessary.
4	7	6 + 3	incorrect pole wheel	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Cyclic drop out detected at speed higher than 10 km/h. Several wheel revolution necessary.	Check polewheel for damages / missing teeth. Use WABCO sensor probe. Replace polewheel if not checked o.k. If additional airgap faults are stored, adjust airgap.
4	8	3 + 3	slip	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	16 sec. slip duration detected.	Adjust airgap. Other possible reasons: gear engaged at slippery conditions or modulator valve does not work correctly.
4	9	5 + 3	wires mismatched	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Wire IG or IGM of another sensor is detected.	Check for mismatch-fault of another sensor. Correct harness.
4	10	3 + 3	speed drop-out	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	Temporarily loss of wheel speed signal. Air gap too large, sensor voltage exceeds trigger level at too late.	Adjust airgap. Check sensor wiring and connectors for intermittent contact. Turn the wheel and read out amplitudes of sensor signals and compare with required values.
4	11	5 + 3	abnormal speed	17;18/18	WL	ABS: partial disabled ASR, RSC/A: disabled SMR: disabled with standard parameterset not as fault interpreted. FMI 11 not stored.	Brake squeezes or chatters.	NO repair instruction. Check sensor wiring and connectors for intermittent contact. Check toothed wheel for damages. Read out amplitudes of sensor signals and compare with required values.
4	12	5 + 3	frequency too high	17;18/18	WL	ABS: wheel disabled ASR, RSC/A: disabled SMR: disabled	non plausible sensor frequency measured.	Check sensor wiring and connectors for intermittent contact. Change ELECTRONIC if fault occurrence repeats.

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Note:

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SID, SPN	FMI	Blink Code	FAULT	Basic, Universal pin/plug	Fault-indication	ABS-E with ESC/RSC/A (Universal) COMMENT (REACTION)	Cause	Action
<b>Modulator left front</b>								
7	3	2 + 2	shorted to UBATT	3;6/18	WL	ABS: disabled SMR: disabled ASR, RSC/A: disabled	Inlet (EV) or outlet (AV) are short-circuited to battery supply or to another modulator wire.	Check modulator wires.
7	5	2 + 2	open circuit	3;6/18	WL	ABS: wheel disabled RSC/A: disabled	Inlet (EV) or outlet (AV) wire is broken.	Check modulator wires.
7	6	2 + 2	shorted to ground	3;6/18	WL	ABS: wheel disabled RSC/A: disabled	Inlet (EV) or outlet (AV) is shorted to ground.	Check modulator wires.
<b>Modulator right front</b>								
8	3	2 + 1	shorted to UBATT	1;4/18	WL	ABS: disabled SMR: disabled ASR, RSC/A: disabled	Inlet (EV) or outlet (AV) are short-circuited to battery supply or to another modulator wire.	Check modulator wires.
8	5	2 + 1	open circuit	1;4/18	WL	ABS: wheel disabled RSC/A: disabled	Inlet (EV) or outlet (AV) wire is broken.	Check modulator wires.
8	6	2 + 1	shorted to ground	1;4/18	WL	ABS: wheel disabled RSC/A: disabled	Inlet (EV) or outlet (AV) is shorted to ground.	Check modulator wires.
<b>Modulator left rear</b>								
9	3	2 + 4	shorted to UBATT	2;5/18	WL	ABS: disabled ASR, RSC/A: disabled SMR: disabled	Inlet (EV) or outlet (AV) are short-circuited to battery supply or to another modulator wire.	Check modulator wires.
9	5	2 + 4	open circuit	2;5/18	WL	ABS: wheel disabled SMR: disabled ASR: Diff. Brake disabled RSC/A: disabled	Inlet (EV) or outlet (AV) wire is broken.	Check modulator wires.
9	6	2 + 4	shorted to ground	2;5/18	WL	ABS: wheel disabled SMR: disabled ASR: Diff. Brake disabled RSC/A: disabled	Inlet (EV) or outlet (AV) is shorted to ground.	Check modulator wires.
<b>Modulator right rear</b>								
10	3	2 + 3	shorted to UBATT	8;9/18	WL	ABS: disabled ASR, RSC/A: disabled SMR: disabled	Inlet (EV) or outlet (AV) are short-circuited to battery supply or to another modulator wire.	Check modulator wires.
10	5	2 + 3	open circuit	8;9/18	WL	ABS: wheel disabled SMR: disabled ASR: Diff. Brake disabled RSC: disabled	Inlet (EV) or outlet (AV) wire is broken.	Check modulator wires.
10	6	2 + 3	shorted to ground	8;9/18	WL	ABS: wheel disabled SMR: disabled ASR: Diff. Brake disabled RSC: disabled	Inlet (EV) or outlet (AV) is shorted to ground.	Check modulator wires.

SID, SPN	FMI	Blink Code	FAULT	Basic, Universal pin/plug	Fault-indication	ABS-E with ESC/RSC/A (Universal) COMMENT (REACTION)	Cause	Action
<b>other</b>								
13	3	7 + 3	shorted to UBATT	14/14	WL	DBR control disabled	Output is shorted to battery supply.	Check wire.
13	5	7 + 3	open circuit	1..3/14	WL	DBR control disabled	DBR-output is not connected to a load.	Check wire. If load is not permanently supervisable (direct connection to another ECU with an internal high-impedance pull up resistor) check parameter setting.
13	6	7 + 3	shorted to ground	14/14	WL	DBR control disabled	Output is shorted to ground.	Check wire.
14	4	8 + 1	Voltage supply axles 1+2+Dif, low voltage/open circuit	8/14	WL	ABS: disabled ASR, RSC/A: disabled SMR: disabled	Supply voltage is temporarily too low. WL on as long as voltage is too low.	Check supply wire and fuse.
14	5	8 + 5	GND 2 open circuit	9/14	WL	ABS: disabled ASR, RSC/A: disabled SMR: disabled	Connection to central Ground interrupted or with too high resistance.	Check wire
14	7	8 + 3	Voltage supply axles 1+2+Dif, internal relay does not open	internal	WL	ABS: disabled ASR, RSC/A: disabled SMR: disabled	Internal relay does not open power line.	Change ELECTRONIC if fault detection repeats.
15	3	8 + 5	Dif-OV (LD) shorted to Ubatt	7/18 Univ: 8/15	WL	ASR: Diff. Brake disabled RSC: disabled	output is shorted to battery supply.	Check wire

# WABCO – ABS / ASR Fault Codes

SID, SPN	FMI	Blink Code	FAULT	Basic, Universal pin/plug	Fault-indication	ABS-E with ESC/RSC/A (Universal) COMMENT (REACTION)	Cause	Action
15	4	8 + 1	ECU Voltage supply, axle 3 + Aux. Low voltage/open circuit	7/14	WL	ABS: disabled ASR, RSC/A: disabled SMR: disabled	Supply voltage is temporarily too low. WL on, as long as voltage is too low.	Check supply wire and fuse.
15	5	8 + 5	Dif-OV (LD) high impedance	7/18 Univ: 8/15	WL	ASR: Diff. Brake disabled RSC: disabled	lowside driver does not work	Change ELECTRONIC if fault detection repeats.
15	6	8 + 5	Dif-OV (LD) shorted to ground	7/18 Univ: 8/15	WL		output is shorted to ground.	Check wire
15	7	8 + 3	Voltage supply 3rd axle+Aux. internal relay does not open (not Basic)	internal	WL	ABS: disabled ASR, RSC/A: disabled SMR: disabled	Internal relay does not open power line.	Change ELECTRONIC if fault detection repeats.
16	3	7 + 7	BLS / Pres.Sens. shorted to UBATT	2/14	WL		Brake permanent activated or input shorted to plus	Check wire and pressure transducer
16	5	7 + 7	BLS / Pres.Sens. open or shorted to ground	2/14	WL		Brake input grounded or open circuit	Check wire and pressure transducer
18	3	7 + 2	Diff. Brake Valve, shorted to UBATT	16/18	WL	ASR: Diff. Brake disabled RSC: disabled	Output is shorted to battery supply.	Check wire.
18	5	7 + 2	Diff. Brake Valve, open circuit	16/18	WL	ASR: Diff. Brake disabled RSC: disabled	Output wire is interrupted.	Check wire
18	6	7 + 2	Diff. Brake Valve, shorted to ground	16/18	WL	ASR: Diff. Brake disabled RSC: disabled	Output is shorted to ground.	Check wire
19	1	7 + 6	FA Brake Valve, shorted to UBATT	13..16/2nd18	WL	ASR: Diff. Brake disabled RSC: disabled	Output is shorted to battery supply.	Check wire.
19	2	7 + 6	FA Brake Valve, open circuit	16/2nd18	WL	RSC disabled	Output wire is interrupted.	Check wire.
19	3	7 + 6	RSC valve, shorted to UBATT	13/15	WL	ASR: Diff. Brake disabled RSC: disabled	Output is shorted to battery supply.	Check wire.
19	4		FA Brake Valve, shorted to ground	16/2nd18	WL	RSC disabled	Output is shorted to ground.	Check wire.
19	5	7 + 6	RSC Valve, open circuit	13/15	WL	RSC disabled	Output wire is interrupted.	Check wire.
19	6	7 + 6	RSC Valve, shorted to ground	13/15	WL	RSC disabled	Output is shorted to ground.	Check wire.
19	10	?	SAS&ESC Module Supply shorted to plus	7/2nd18	WL	ESC disabled	short circuit to battery supply	check and correct wire
19	11	?	SAS&ESC Module Supply open circuit	7/2nd18	WL	ESC disabled	opencircuit	check and correct wire
19	12	?	SAS&ESC Module Supply shorted to ground	7/2nd18	WL	ESC disabled	short circuit to ground	check and correct wire
23	5	7 + 4	Warning Light WL-Relay (E-Frame)	15/14	WL if grounded. off if burned out	Blinkcode activation via warning lamp switch longer than 16 sec. causes fault detection	Output detects no load to plus or is grounded.	Check wire and bulb
79	1	7 + 8	TPM		-		change of wheelcircumference detected	check and correct tire pressure

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88	1		ESC initialisation not completed		ATC-L	ESC temporarily disabled	ESC initialisation not completed	follow ECU initialisation process
88	2	7 + 1	ESC Datalink		ASR-L	ESC disabled	data communication faults with ESC module	
88	5	7 + 1	ESC CAN datalink		ATC-L	ESC disabled	data communication faults with ESC module	Check wire
88	6	7 + 1	ESC Datalink		ATC-L	ESC disabled	data communication faults with ESC module	Check wire
88	9	7 + 1	ESC Datalink		ATC-L	ESC disabled	data communication faults with ESC module	Check wire
88	9	8 + 6	ESC CAN datalink	X4 2nd 18/1-3	ATC-L	ESC disabled	data communication faults with ESC module	check harness between ABS ECU and ESC module
88	12	8 + 6	ESC module		ATC-L	ESC disabled	internal	replace ESC-Modul if fault repeats
88	13		ESC initialisation required		ATC-L	ESC disabled	ABS or ECS module was exchanged	follow ECU initialisation process
88	14	8 + 6	mounting ESC module		ATC-L	ESC disabled	mounting not in accordance with specification	check mounting of ESC module
89	1	8 + 6	SAS-Offsetfault		ASR-L	ESC disabled	Off set out of tolerance	check installation
89	9	7 + 1	SAS		ATC-L	ESC disabled	data communication faults with ESC module	
89	12	8 + 6	SAS defect		ATC-L	ESC disabled	Steering Angle Sensor defect	replace Steering Angle Sensor and start new initialisation
89	13		SAS not calibrated		ATC-L	ESC temporarily disabled	new sensor installed	follow ECU initialisation process
231	2	7 + 1	SAE J1939 VSC1 speed bad plausibility	1 ..3/14	WL	supervision normally not activated	unplausibility between received vehicle speed and ABS vehicle speed. Supervision normally not activated	check tire size and set parameter correctly
231	5	7 + 1	SAE J1939 open or short circuit	1 ..3/14	WL	ASR, RSC/A: disabled SMR: disabled SAE J1939 switched to inactive because communication is disturbed.	SAE J1939 communication impossible. SAE J1939 high open or short circuit to plus or ground or SAE J1939 low or low/high are mismatched.	Check wire.
231	6	7 + 1	SAE J1939 no access	1;3/14	WL	ASR, RSC/A: disabled SMR: disabled ABS ECU tries multiple to restart communication. Within 10 sec. it is not possible. SAE J1939 remains inactive. FMI 5 might be additionally stored.	SAE J1939 communication impossible. SAE J1939 high open or short circuit to plus or ground or SAE J1939 low or low/high are mismatched.	Check wire
231	7	7 + 1	SAE J1939 ERC_DR time-out	1;3/14	WL	Driveline Retarder may cause instability.	Driveline integrated retarder sends message incorrectly. Time out supervision detects faults if activated.	Check Driveline-Retarder ECU or it's wires
231	8	7 + 1	SAE J1939 ERC_ER time-out	1;3/14	WL	Engine Retarder may cause instability.	Engine integrated retarder sends message incorrectly. Time out supervision detects fault if activated. Standard is no timeout supervision.	Check engine ECU or it's wires
231	9	7 + 1	SAE J1939 time-out EEC1	1;3/14	WL	ASR, RSC/A: disabled SMR: disabled dragtorque may cause instability	engine electronic sends torque message incorrectly. Time out supervision detects fault.	Check engine ECU or it's wires
231	10	7 + 1	SAE J1939 ERC_EXR time-out	1;3/14	WL	Exhaust Retarder may cause instability.	Exhaust integrated retarder sends message incorrectly. Time out supervision detects fault if activated. Standard is no timeout supervision.	Check engine ECU or it's wires
231	12	8 + 3	SAE J1939, internal error	internal	WL	ABS: disabled SMR: disabled ASR, RSC/A: disabled	internal fault	Replace ELECTRONIC if fault detection repeats.
251	3	8 + 2	Overvoltage	8/14	WL	all valves disabled; no ABS, SMR, ASR-Diff. Brake, RSC/A	Supply voltage too high for more than 5 sec.	Check alternator and battery.

SID, SPN	FMI	Blink Code	FAULT	Basic, Universal pin/plug	Fault-indication	ABS-E with ESC/RSC/A (Universal COMMENT (REACTION))	Cause	Action
253	2	8 + 2	EBL-Systemunterschied	2/14	WL		EBL disabled by parameter	Check parametersetting.
253	2	8 + 4	ABS System configuration		WL	ABS disabled	ECU memorized system is not in accordance with the harness. Loads detected at outputs which should be open circuit.	check number of sensors and check correct connections of the valve-wires. Compare how many modulators are set in the ECU. If differs perform SYSTEM-RESET.
253	2	8 + 4	EEPROM, Wheel Parameter incorrect		WL	Wheel parameters are out of tolerance. No ABS, SMR, ASR, RSC, RSC	wrong parameter	Correct parameter set or Replace ELECTRONIC if fault detection repeats.
253	12	8 + 4	EEPROM, checksum		WL	Was diagnostic device disconnected during active diagnosis? No ABS, SMR, ASR, RSC/A, no blinkcode	Checksum of parameter or analog adjustment is wrong	Check parametersetting.
253	12	8 + 4	EEPROM, ESC Parameter wrong		ATC-lamp	ESC disabled	wrong parameter set	Correct parameter set or Replace ELECTRONIC if fault detection repeats.
253	12	8 + 4	EEPROM customer checksumc		WL			
253	13	8 + 4	ABS configuration		WL	ABS disabled	ECU does not accept valve system of harness.	check number of sensors and check correct connections of the valve wires.
253	14	8 + 6	Accelerometer vs. Front Axle plausibility	internal	WL	RSC/A disabled	linearity fault. measured acceleration offset/amplitude not plausible	Check ECU mounting. Replace ELECTRONIC if fault detection repeats
254	5	8 + 4	ELECTRONIC w/o loads	x/18	WL	Normal for EOL testing of single cabin. Fault not memorized. No ABS, SMR, ASR, RSC/A	No modulators connected	Check harness for sensors and modulators
254	8	7 + 1	excessive slip / dynotester	all sensors	WL	On rolling roads resp. dynotesters slip supervision time can be exceeded when faultdetection is not disabled by diagnostic tools or blinkcode (3sec.) . ABS, SMR, ASR disabled	One axle was much faster than other.	Check airgaps respectively vehicle use.
254	9	2 + 1	Modulator-Valve activation-time	all modulators	temporarily WL	75 % of 5 minutes modulator was activated. Valve / corr. functions temporarily disabled. No ASR during fault activness.	Control via modulator was to long. After a delay time function is normal.	
254	12	8 + 3	Internal Error	internal	WL	no ABS, ASR, SMR, RSC/A, no blinkcode	multiple possibilities	Replace ELECTRONIC if fault detection repeats
254	12	8 + 3	Internal Error	internal	WL	no ABS, ASR, SMR, RSC/A, no blinkcode	multiple possibilities	Replace ELECTRONIC if fault detection repeats
254	13	8 + 6	Accelerometer out of range	internal	WL	RSC/A disabled	measured acceleration out of range	Replace ELECTRONIC if fault detection repeats
254	14	8 + 6	ECU mounting	internal	WL	RSC/A disabled	mounted with a slope. measured acceleration offset not plausible	Check ECU mounting. Replace ELECTRONIC if fault detection repeats
254	14	8 + 6	RSC Systemfault	internal	WL if Param. is set	RSC/A disabled	Brake Light Switch is NA or a problem with BLS has occurred	Check BLS or BLS signal on CAN VSC1

