TOURING



Electronics and wiring manual

TS 45

9020-230Y Rev.03

EJXU8L1, EJXX8L1

01 April 2015

TEMSA

Value in motion

Vehicle Model : TS 45

Vehicle Variant Code :EJXU8L1, EJXX8L1

Wiring Manual Publishment No :9020-230Y

PAGE REVISION CONTROL TABLE

REVISION NO	REVISION DATE	REVISION PAGE	DECRIPTION	SERVICE BULLETIN NO
Rev.01	21 June 2014	37 (S01-P3) 53 (S03-P2) 87 (S07-P2) 121 (S13-P1) General	13-106 defroster feed cable has been moved to FB-01(4) 11-23 Convertor cable has been moved to FB-02(3). Component no has changed. (changed as 03K020, 03K026.) Convertor feed cable fuse name has changed as FB-02(3). Defroster feed cable fuse name has changed as FB-01(4). Spelling errors have been corrected.	
Rev.02	04 Dec. 2014	35 (S01-P2) 37 (S01-P3) 39 (S01-P3) 81 (S06-P7) 193 (S31-P2)	16-500 cable has been moved to Mux 2.1(B-14) 16-132 cable has been moved to FB-07(3) 16-132 cable was canceled with in FB-12(3) Mux 2.1 Connector B (16-132 cable) supplied with 24V KL30. 13-51C cable was canceled with in Wireless Gateway Rec.	
Rev.03	01 April 2015	Genaral 38 (S01-P3) 87 (S07-P2) 123 (S13-P2)	Epa15 regulation has been updated. FB01-4 and FB07-3 were renewed. Transmission Speed Sensor canceled. Add. Preheater de-activation relay.	

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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 thet vehicle's owner.

This manual is intended to be used commonly for all variants of TS 45 Cummins EPA13 (EJXU8L1). 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

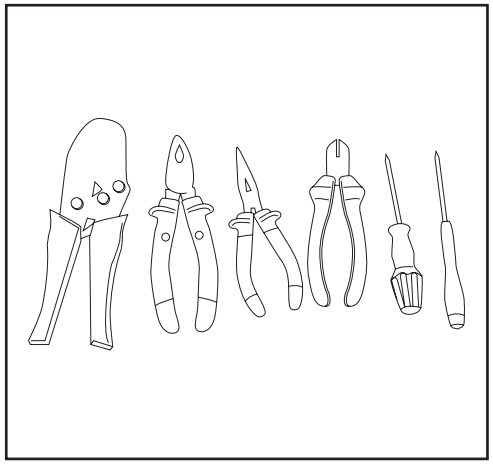
The service and maintenance operations should be carried out by authorized services and be in compliance with TEMSA directives.



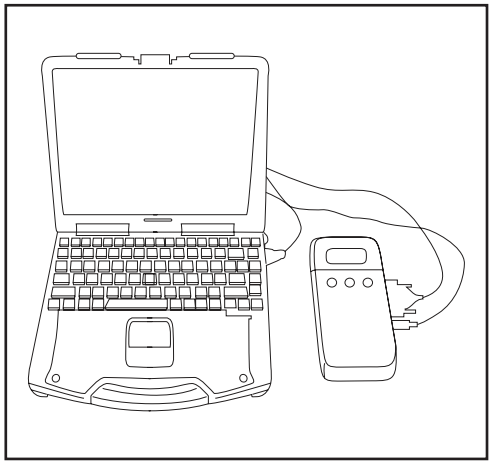
WARNING

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.

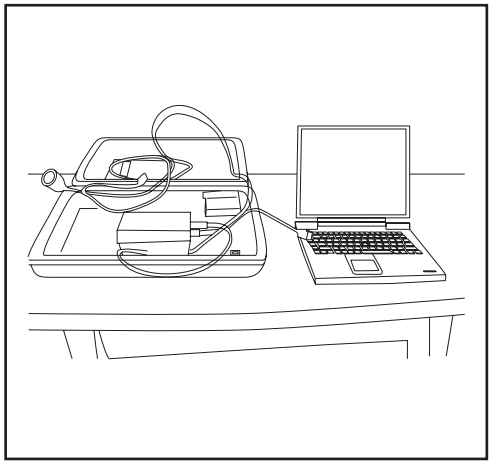
00.1.2 Tools



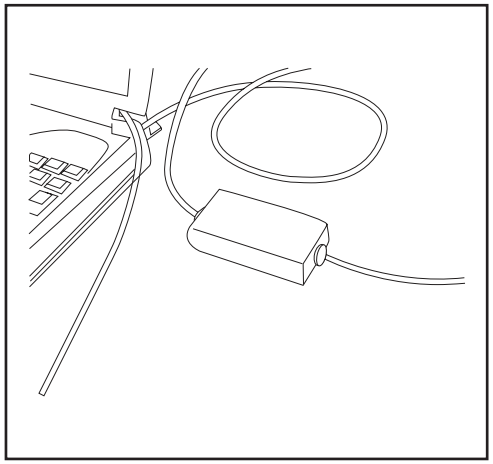
General Tools



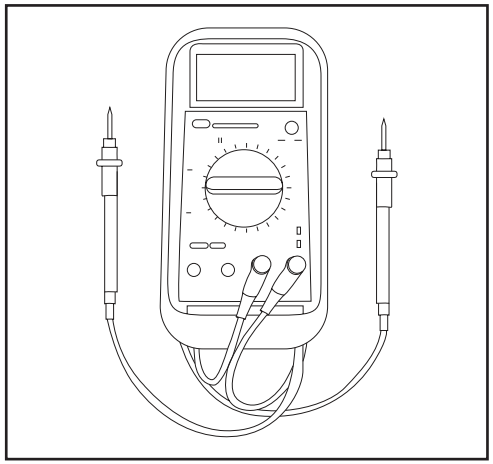
Mitsubishi Diagnostic Tool (MUT III)



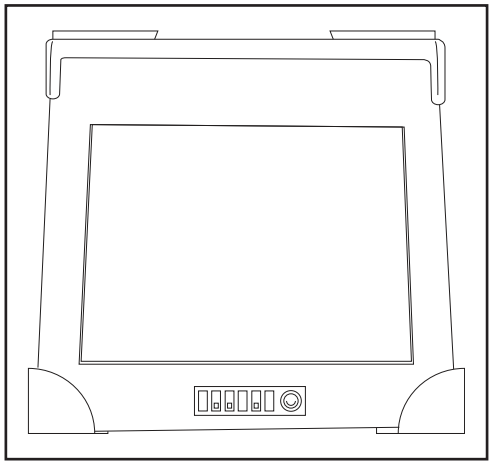
MAN Engine Diagnostic Tool (MANCAT)



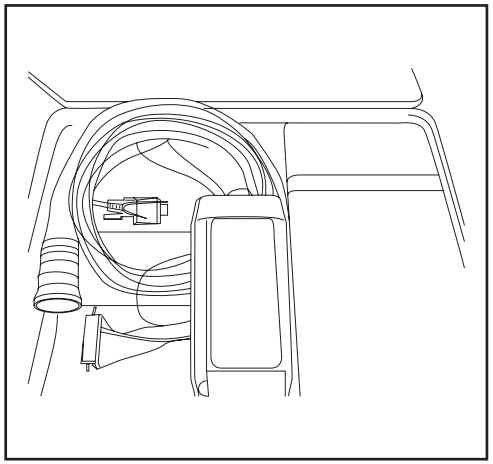
KIBES K-Line Interface Cable



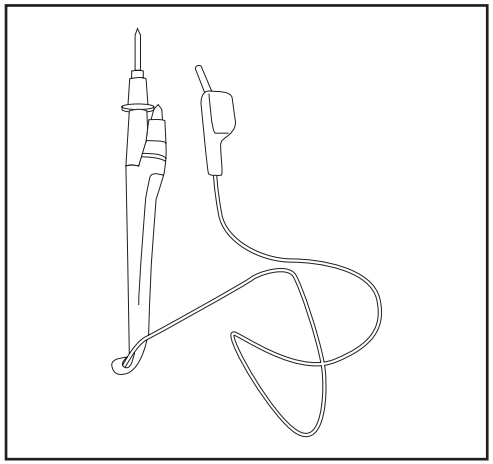
Multimeter



DAF Engine Diagnostic Tool (DAVIE)



CUMMINS Engine Diagnostic Tool (INSIDE)



Connection Wire

00.1.3 Warnings

Symbol List
Operating Instructions in this manual includes the folowing 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.



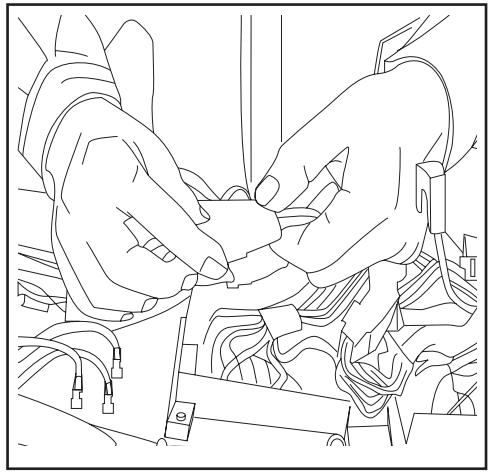
WARNING
This symbol is used in conditions which may cause severe damage or fatal injury if necessary measures are not taken.



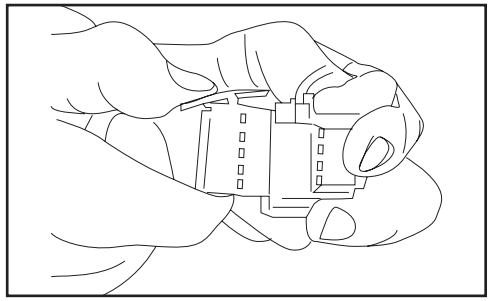
DANGER
This symbol is used to indicate danger.

Safety Precautions
The following safety instructions must be strictly observed.

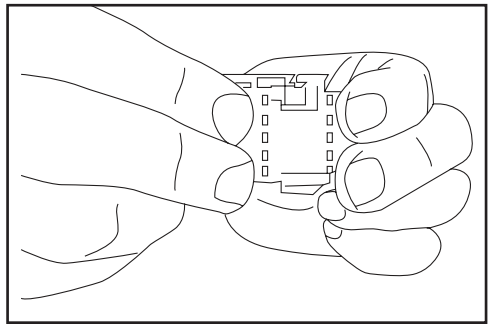
WARNING
To disconnect a connector never pull the harness.



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 0-08.
d) Apply arc welding for the repair of the vehicle parts steps mentioned in the 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

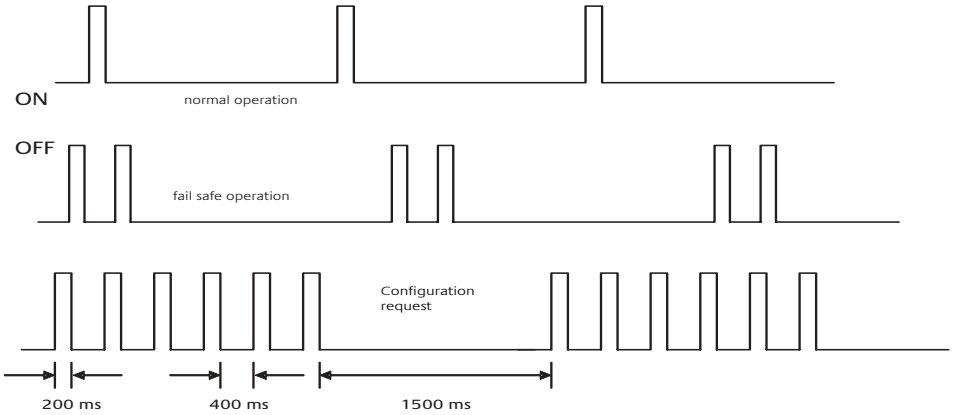
Precautions for multiplex System program installation

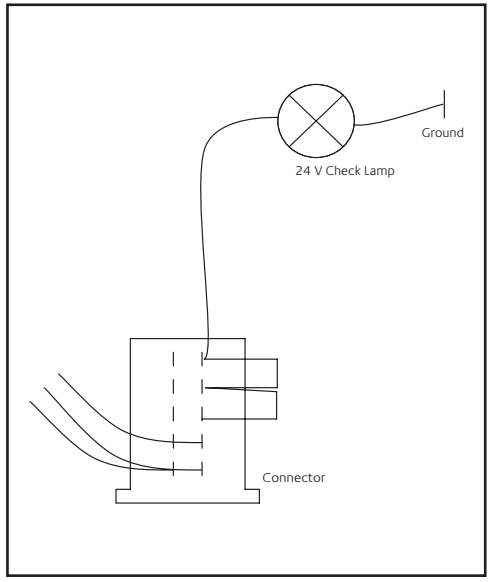
Following instructions must be strictly observed during installation of program to the system.

- 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.

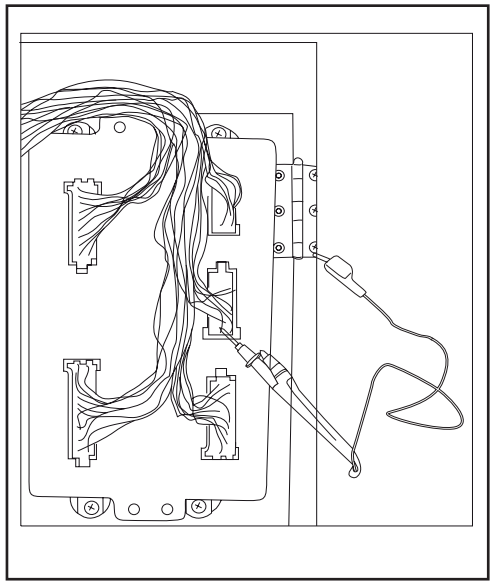
Multiplex System Functional Checks

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

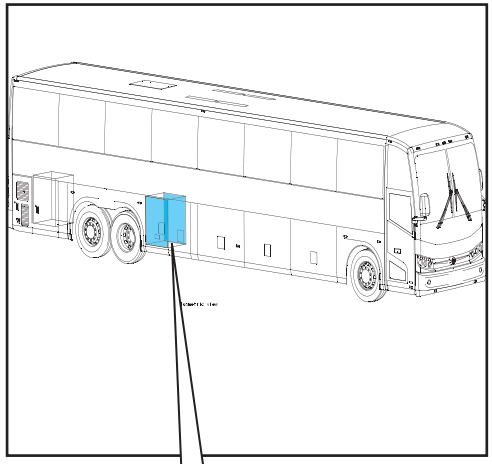




Error Conditions	Cause of Failure
"FAIL SAFE" Operation	CAN-connection failed during operation
Configuration request	Incorrct node ID, incorrect node type or new node (node yet programmed)
OFF	Voltage Supply or CAN already defective or not present when turning on or node defective.
ON	Node defective,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



00.1.5 Cautions Before Service Work

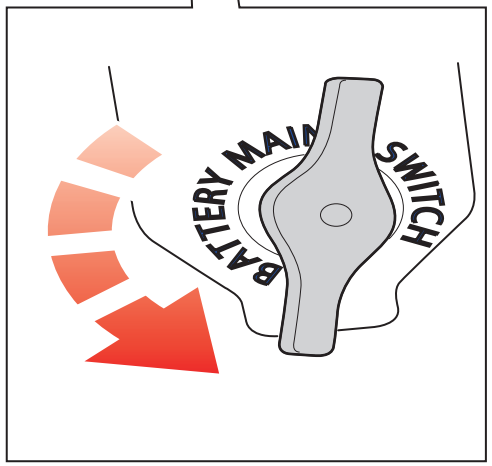


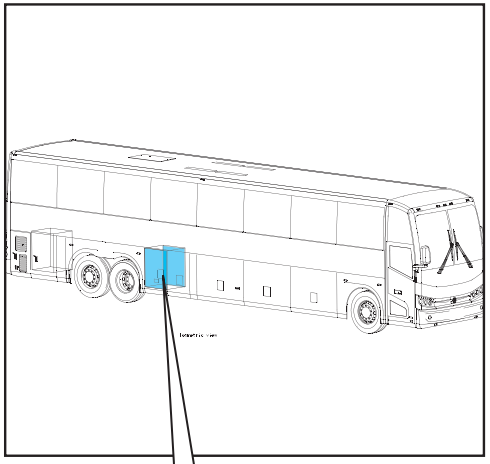
CAUTIONS

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.



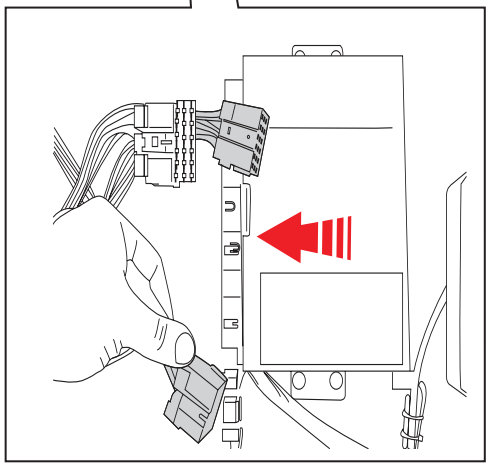


CAUTIONS

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.
- Disconnet all connectors of Electronic Control Unit
- Check the system failure.

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



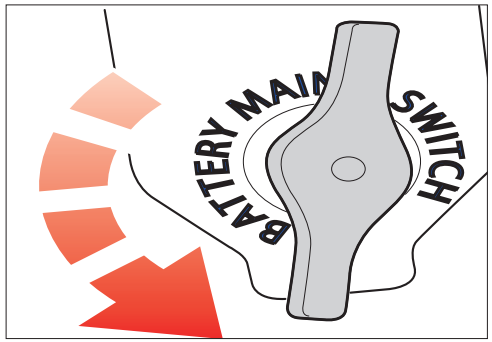
00.1.6 Procedures for Electrical Welding Application



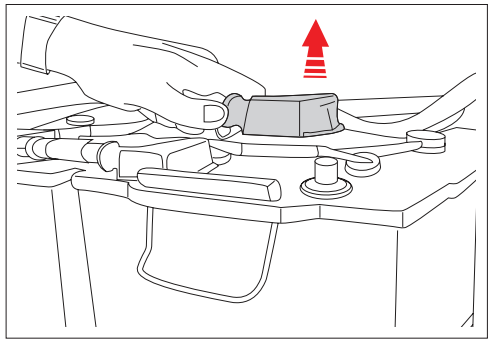
CAUTIONS

Before electrical welding of the vehicle, follow the below mentioned steps

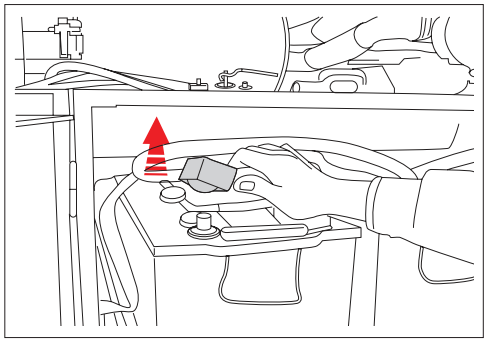
1. Turn the ignition switch to OFF position.



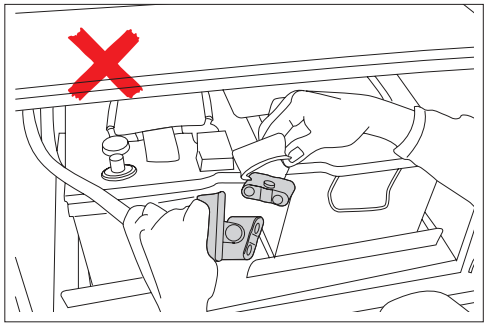
2. Turn the battery cut off switch to ON position.



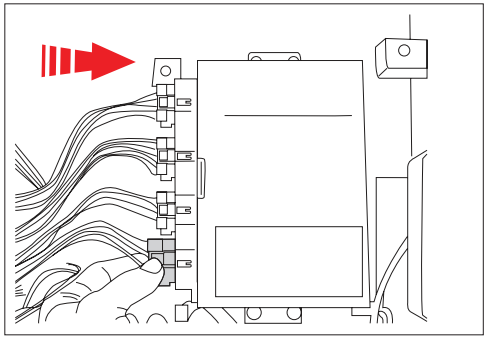
3. Disconnect Battery negative (-) terminal.



4. Disconnect Battery positive (+) terminal.



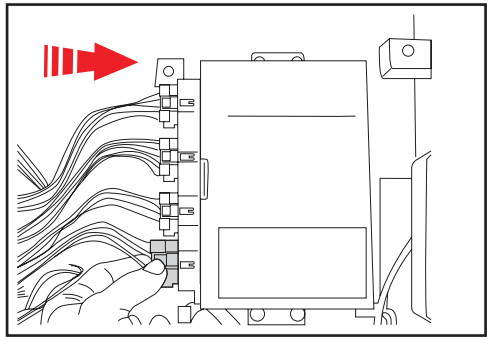
5. Touch and joint negative and positive cables of vehicle to discharge static electric in the harnesses.



6. Disconnect connectors of all Electronic Control Units.

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

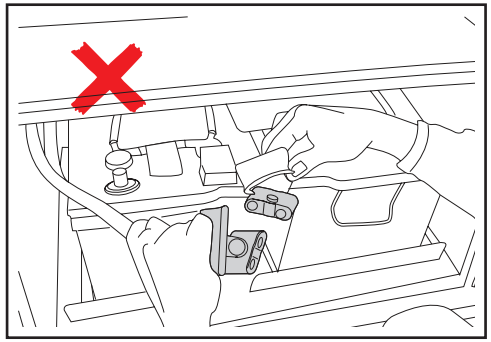
00.1.7 Procedures After Electrical Welding Application



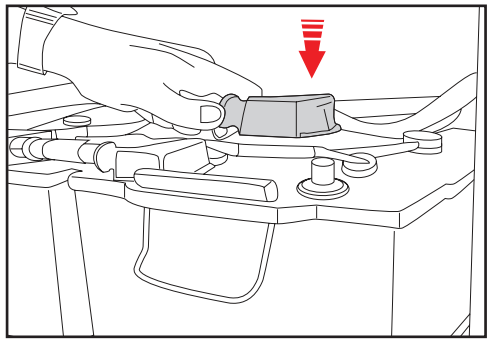
CAUTIONS

After electrical welding of the vehicle, follow the below mentioned steps

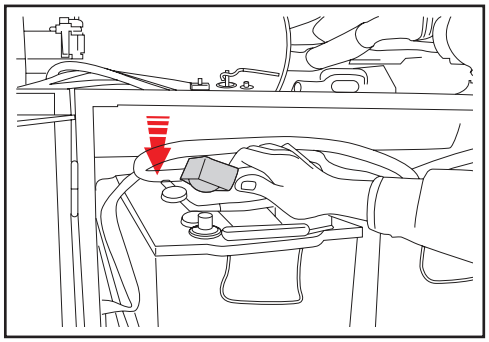
1. Connect all connectors of all Electronic Control Units.



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



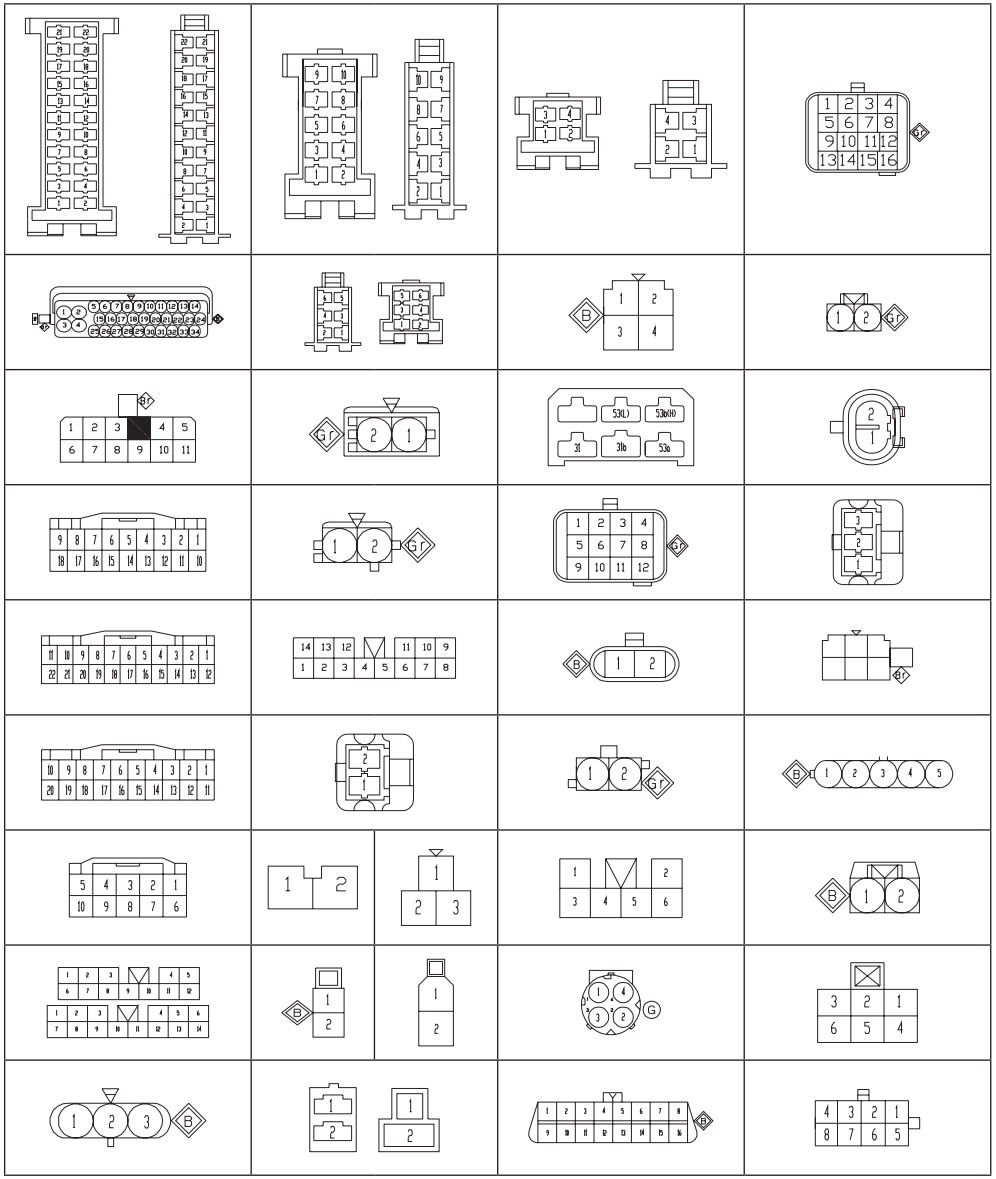
CAUTION

- 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 Switches Lenses

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	**WC** WC Power Switch	Bus Stop Brake Switch
ASR Switch	Electrical Curtain Switch	Convector Control Switch
Exhaust Brake Switch	**STOP START** Engine Start-Stop Switch	Economy Switch
ABS Switch	**UDS** 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



00.2.1 How to Use This Manual

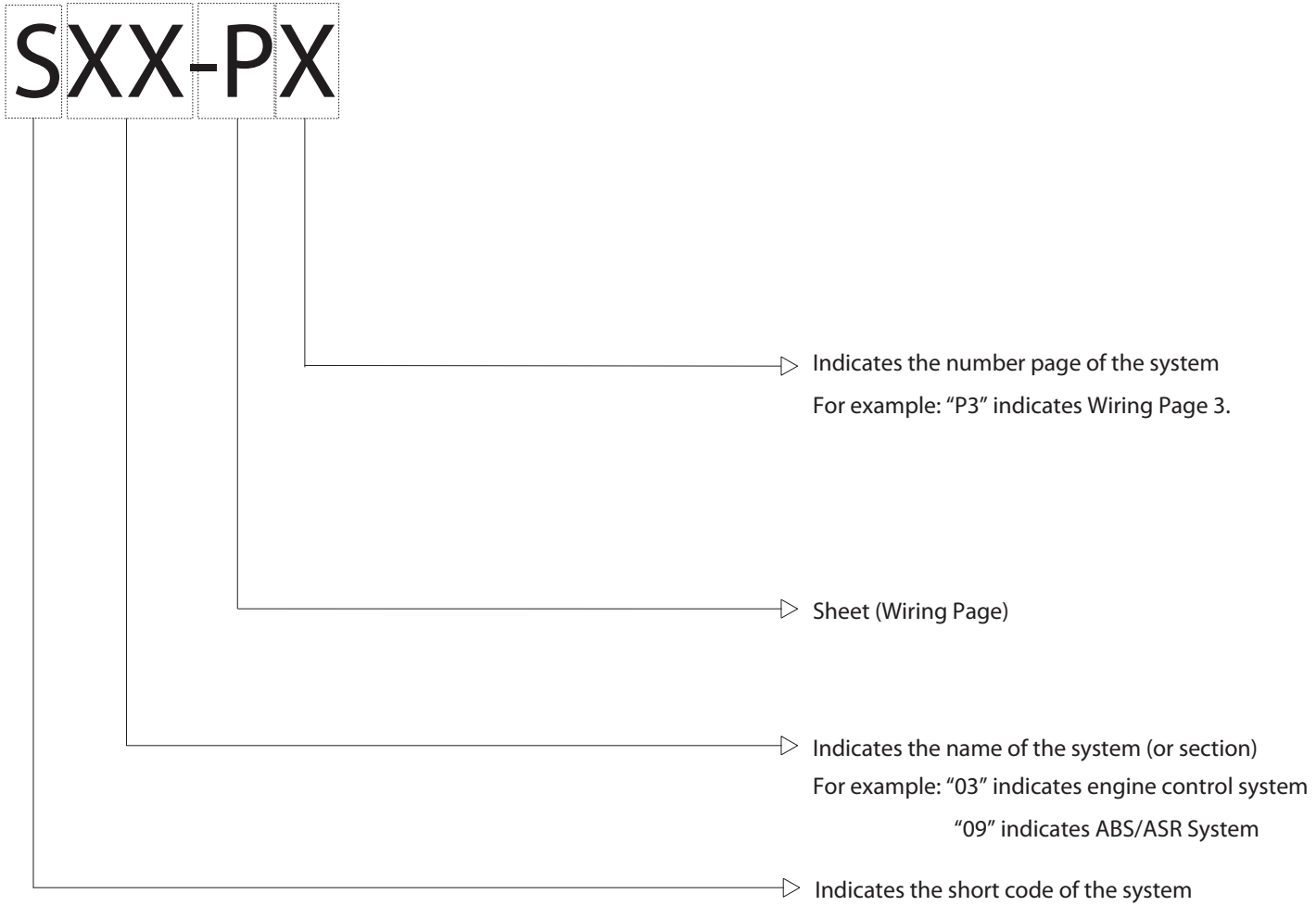
This manual consists of following parts.
1) General Information
2) System Chapters
3) Appendix

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, spesifications, troubleshooting and OEM wiring diagrams are shown,

On Appendix
Software Downloading & Online Test, OEM documents are shown.

00.2.2 Coding system of the Wiring Manual



00.2.3 Wiring Diagram Definitions

While looking to the wiring diagram on manual, you will see two s. On the right hand side you will see electrical wiring diagram. Some symbols and codes exsits 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.

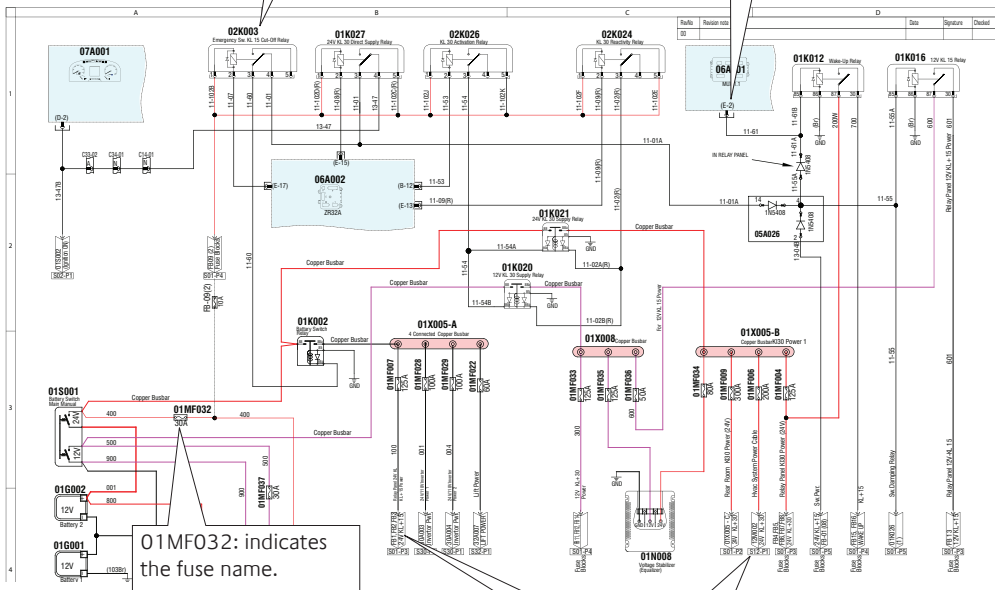
Code	Spanish	Français
01G001	Batería 1	Batterie1
01G002	Batería 2	Batterie1
01K002	Relé del Interruptor del Aislamiento Principal	Relais Contacteur Principal De Sécurité
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)
01K016	Relé KI15 de 12V	Relais 12V KI15
01K020	Relé de alimentación de 12V KI 30	12V KI 30 Relais d'alimentation
01K021	Relé de alimentación de 24V KI 30	24V KI 30 Relais d'alimentation
01K022	relé para permitir que el vehículo se detenga cuando su velocidad sea inferior a 5 km/h	Relais permettant au véhicule de s'arrêter lorsque la vitesse est inférieure à 5 km/h
01K026	Relé de diagnóstico de amortiguación de voltaje	Relé de diagnóstico de amortiguación de voltaje
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30
01MF006	Alimentación del Aire Acondicionado	Alimentation Du Climatiseur
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
01MF009	[illegible]limentación del KI30 1	Alimentation 1 Du KI30
01MF022	Alim[illegible]ación del Elevador	Puissance Du Mecanisme De Levage
02K026	Relé de a[illegible]ión KL 30	KL 30 Relais d'activation
05A026	Grupo de Diod[illegible]esistencias	Bloc De Diodes Et De Resistances
07A001	Grupo de Instrume[illegible]	Combiné D'Instruments
12M002	Motor d[illegible]dor	Moteur Soufflante Du Condenseur
32A007	Elevado[illegible]ll)	Mecanisme De Levage Des Handicapes (Carroll)

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

IMPORTANT : CODE NUMBERS OF COMPONENTS DO NOT REPRESENT PART NUMBERS

01K003 : Indicates the code number for the component.

E 2: indicates the position of the component on diagram. (Exam: A1, B3)



01MF032: indicates the fuse name.

30 A: indicates the amper value of fuse. Fuse definition and location are shown in Power System.

Power Input or Output

KL 31: Ground
KL 58: Park Lamp
KL 30: Battery Power
KL 15: Ignition Power

12M002: Indicates the code of the component.

S12-P1: Indicates the number. (S12-P1= System 12- Wiring Page 1)

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^2

If there is not any number in parenthesis, wire size is 1mm^2.



Wire characteristic as illustrated in Figure B
Wire size is indicated with the cross sectional area of conductor.

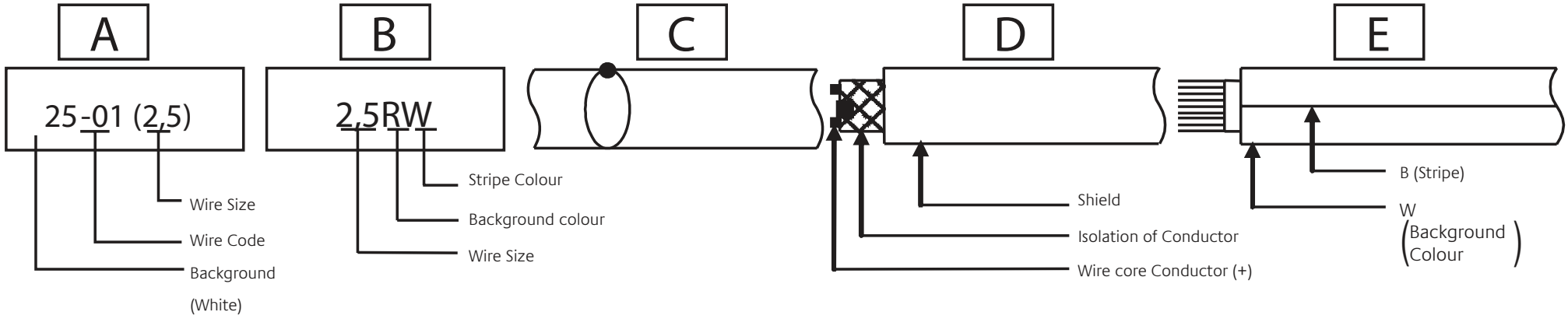
2.5RW
2,5: Cross sectional area of conductor is 2,5 mm^2.
RW: Background colour is RED, Stripe colour is WHITE

No wire size is shown for a shielding wire but is

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:

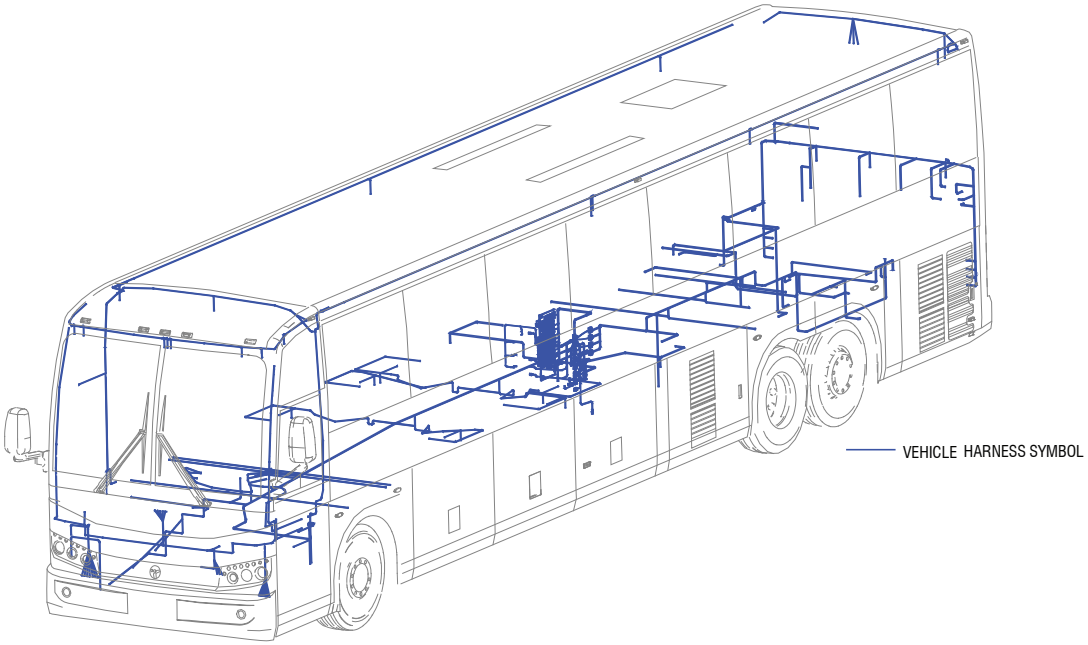
R Red
L Blue
Br Brown

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)



00.2.5 Wire Definitions

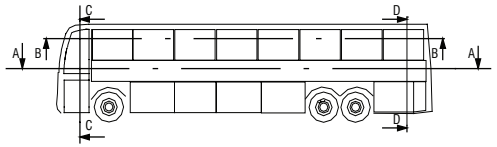
BACKGROUND & STRIPE COLOURS							
B	Black	LgR	Light Green/Red	VY	Violet/Yellow		
BG	Blcak/Green	LgY	Light Green/Yellow	W	White		
BL	Black/Blue	LgW	Light Green/White	WB	White/Black		
BR	Black/Red	LO	Blue/Orange	WG	White/Green		
Br	Brown	LR	Blue/Red	WL	White/Blue		
BrB	Brown/Black	LW	Blue/White	WR	White/Red		
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				



00.3. Wiring Harness Configurations

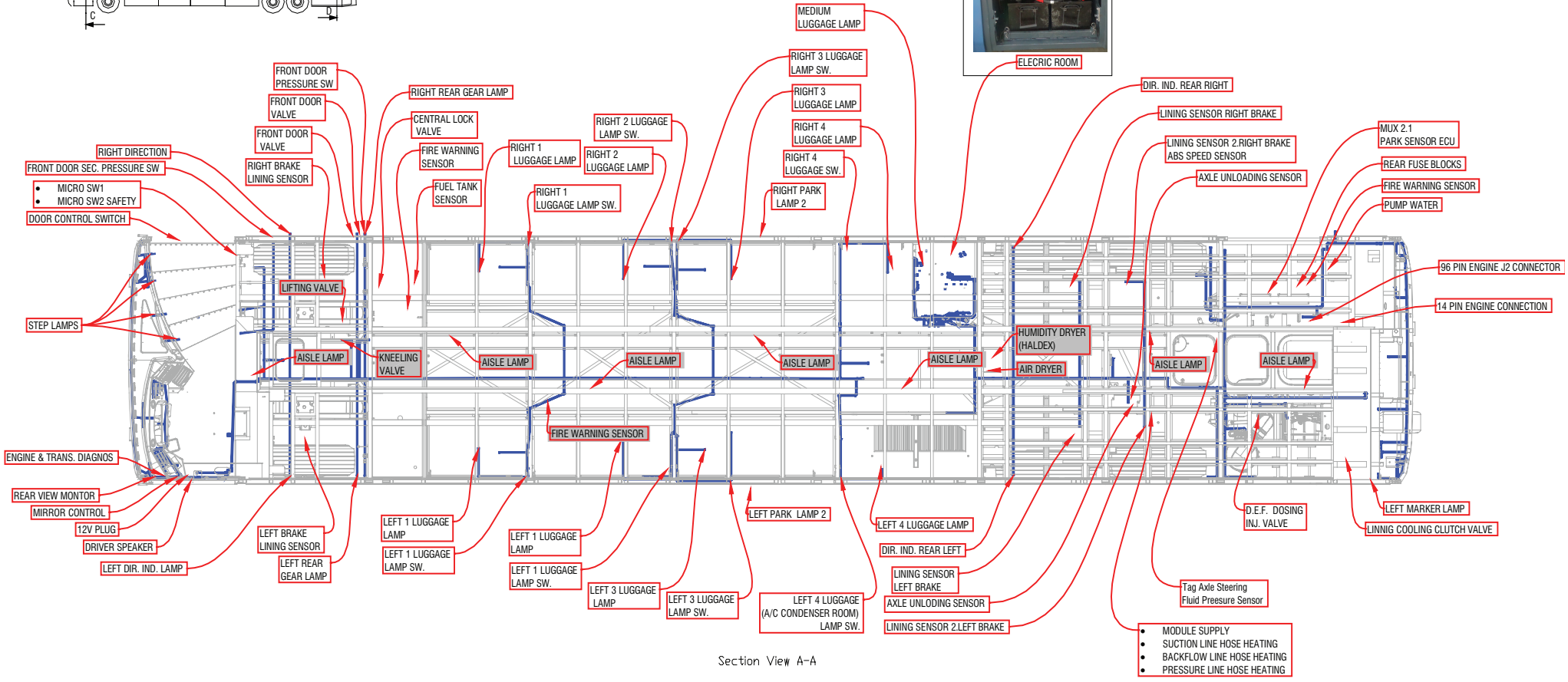
00.3.1 Chassis Wiring Harness 22
00.3.2 Roof Wiring Harness 23
00.3.3 Front Body Wiring Haness 24
00.3.4 Engine Room Wiring Harness 25
00.3.5 A/C (HVAC) Wiring Harness 26
00.3.6 Socket Connection Location 27
00.3.7 Spare Cable (Chassis Wiring Harness) 28
00.3.8 Diagnostic Connectors 29

00.3.1 CHASSIS WIRING HARNESS

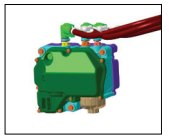




ELECRIC ROOM

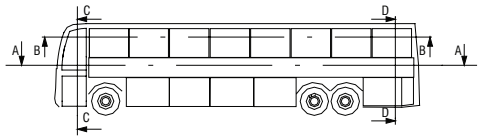


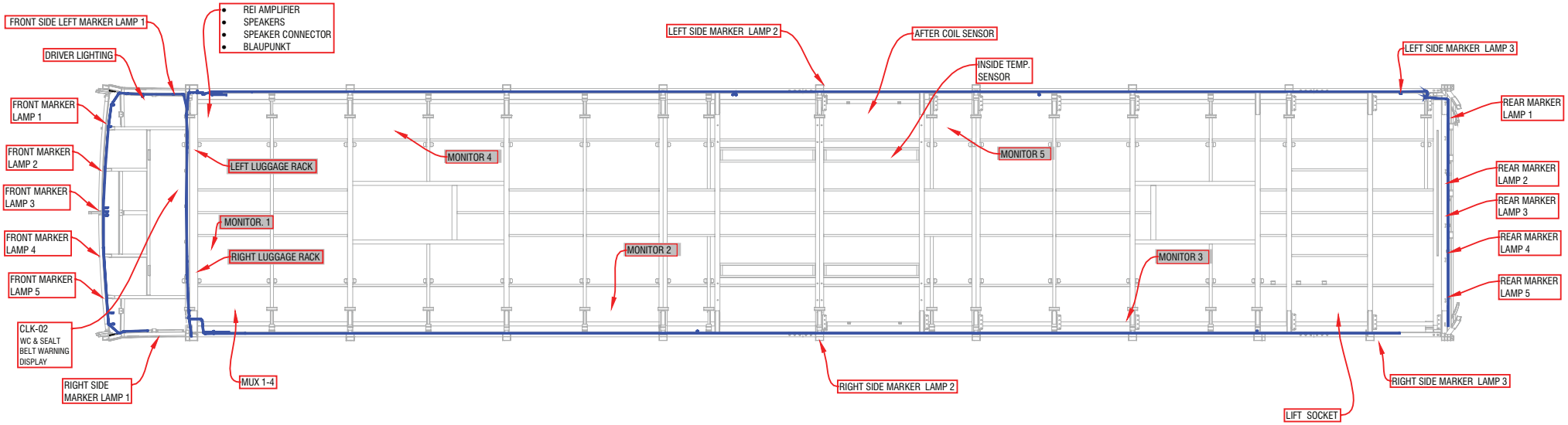
Section View A-A



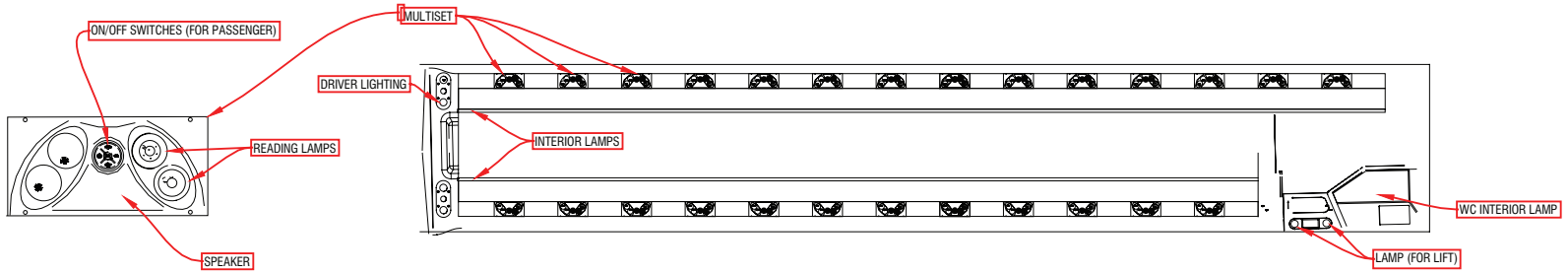
Note: Harness Symbol
xxx Component Label (These red arrows show the approximate locations of labels on harnesses.)

00.3.2 ROOF WIRING HARNESS



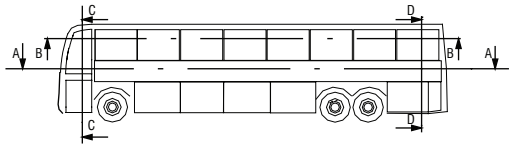


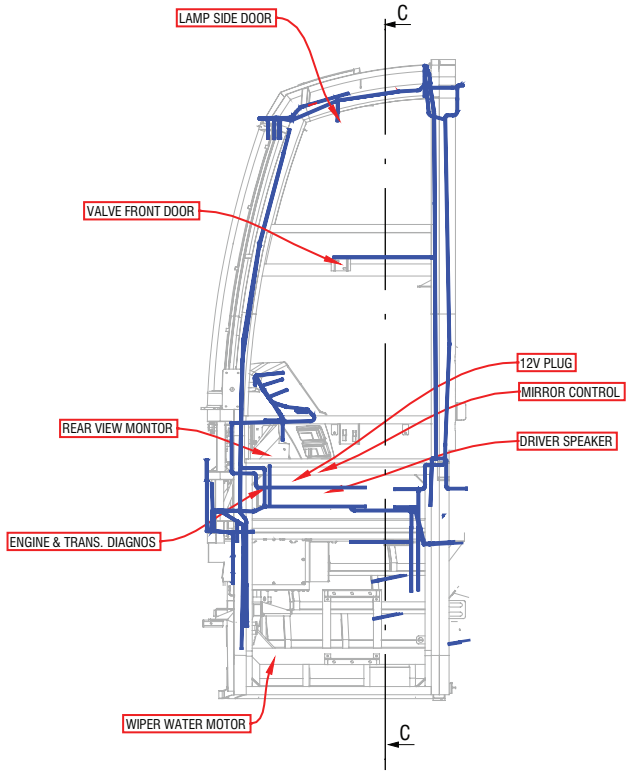
Section View B-B

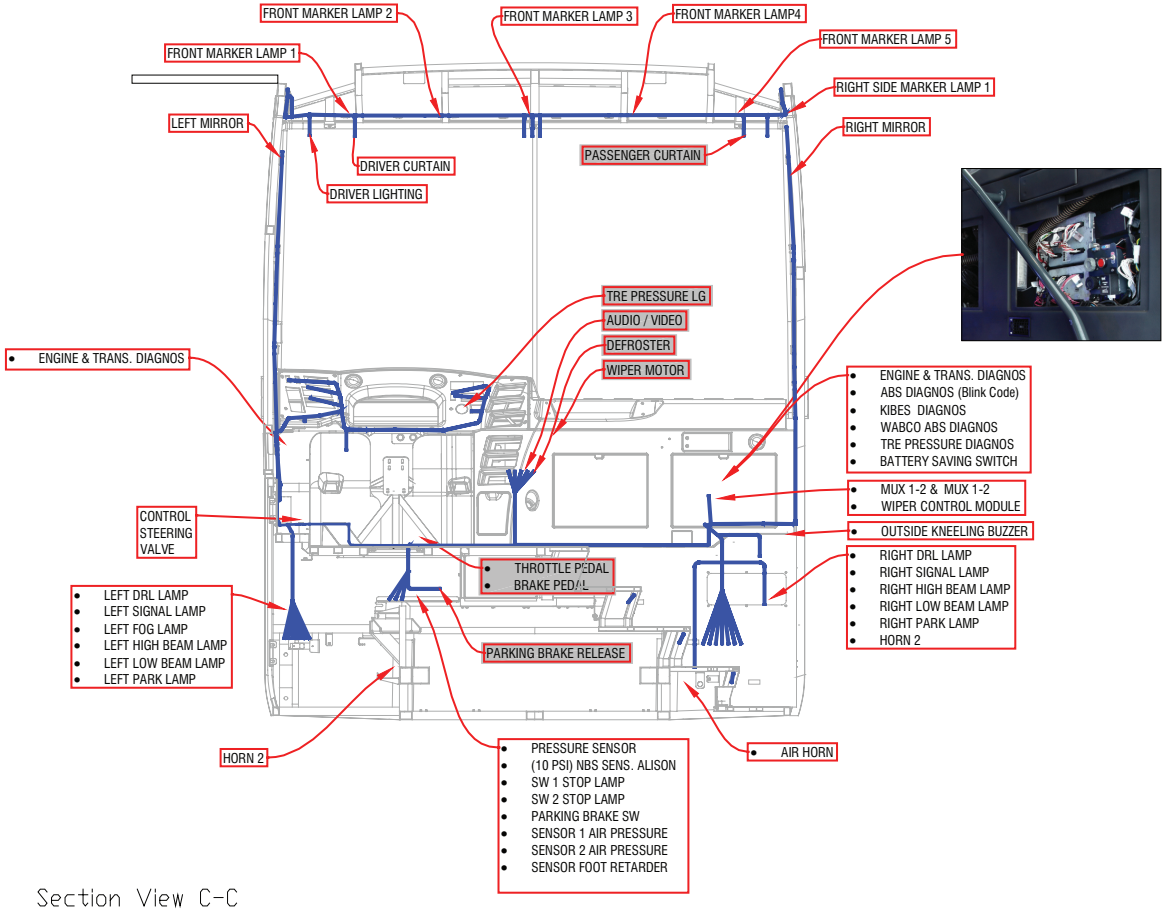


Note: Harness Symbol
xxx Component Label (These red arrows show the approximate locations of labels on harnesses.)

00.3.3 FRONT BODY WIRING HARNESS







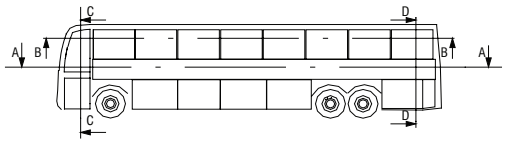
Section View C-C

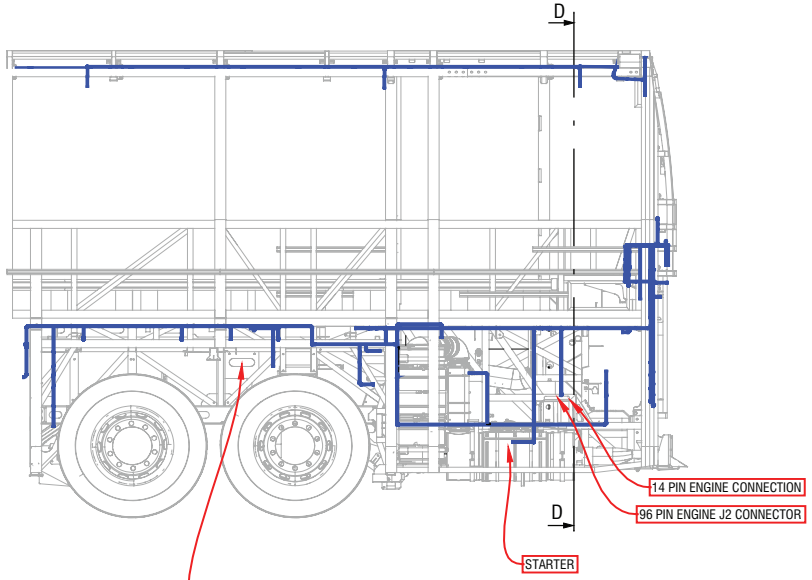
Note: Harness Symbol

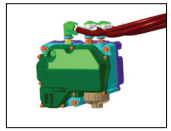
xxx Component Label (These red arrows show the approximate locations of labels on harnesses.)

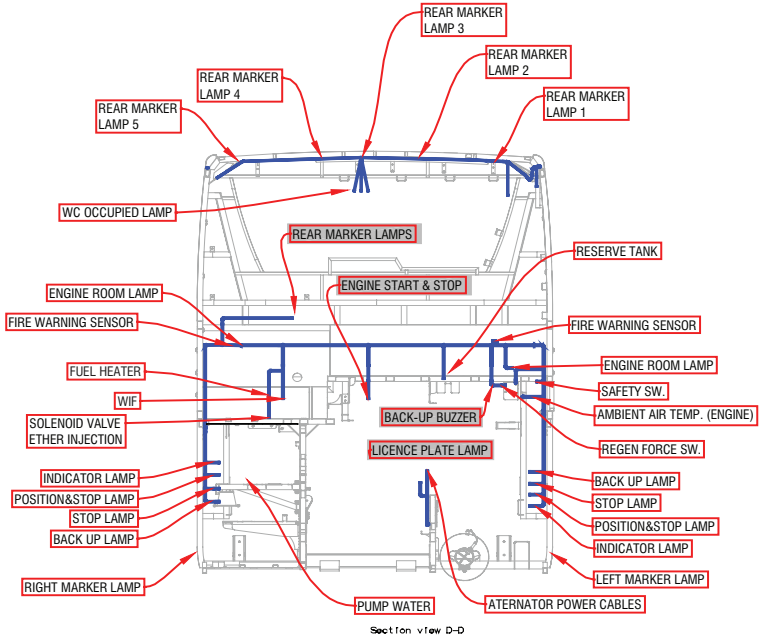
	TS45	Note:	TEMSA

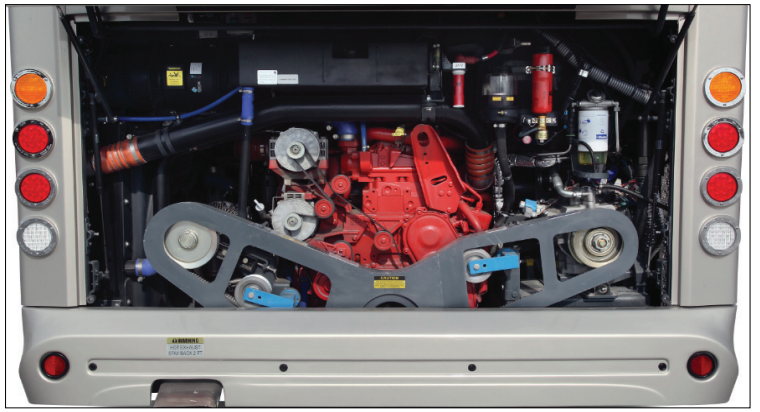
00.3.4 ENGINE ROOM WIRING HARNESS







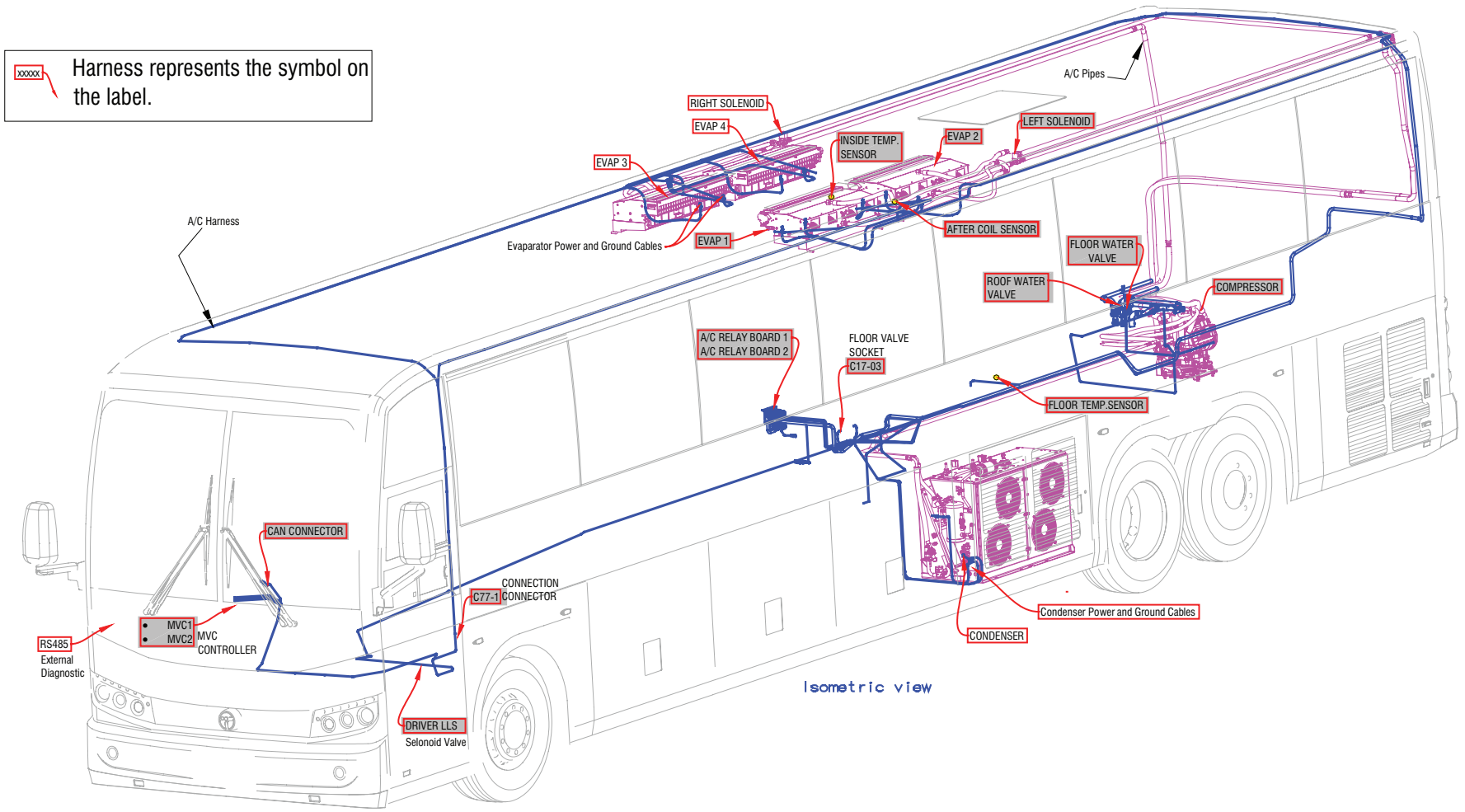




xxx Component Label (These red arrows show the approximate locations of labels on harnesses.)

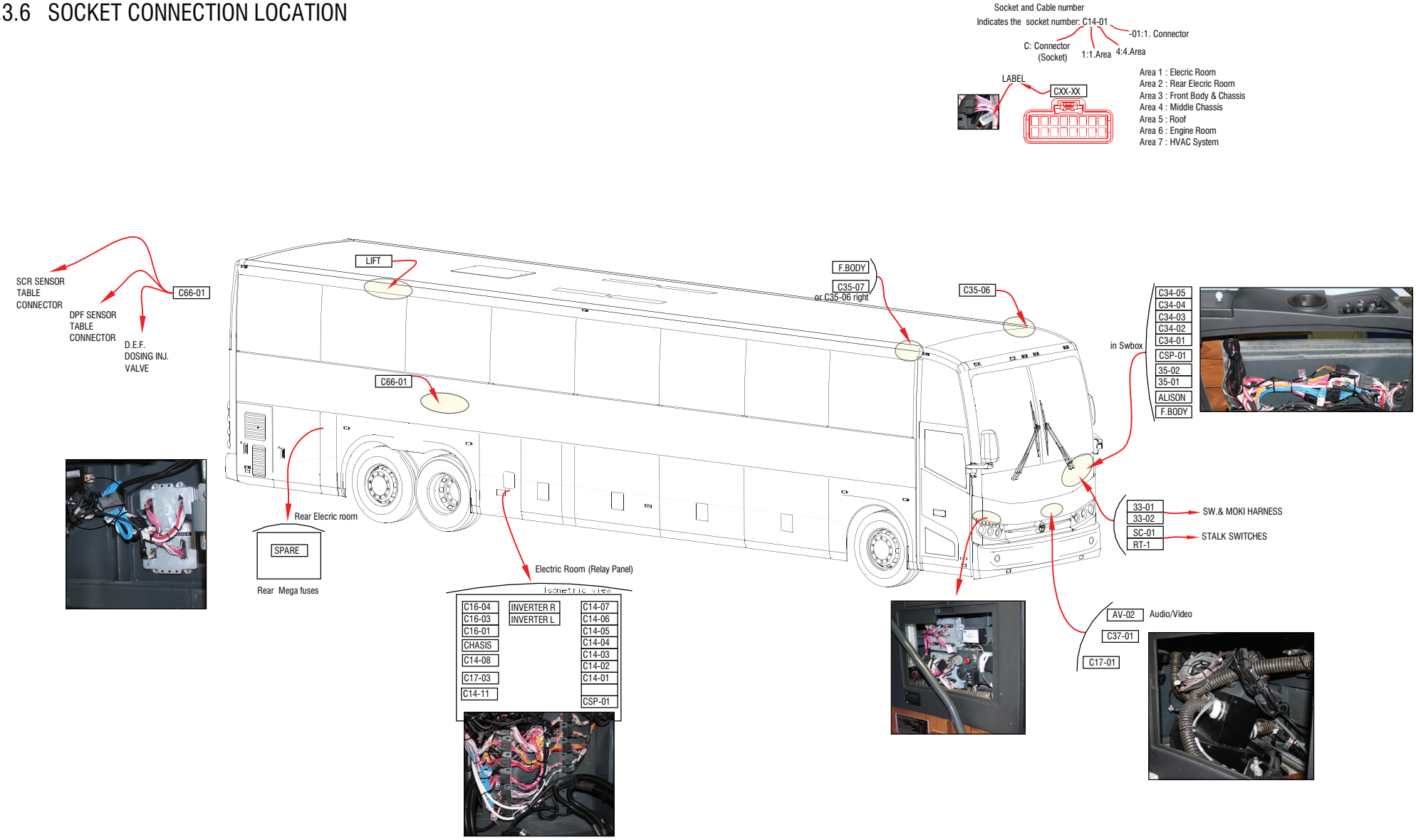
Note: Harness Symbol

00.3.5 A/C (HVAC) WIRING HARNESS

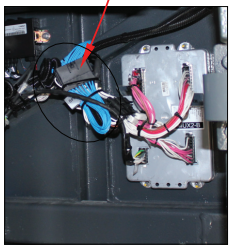


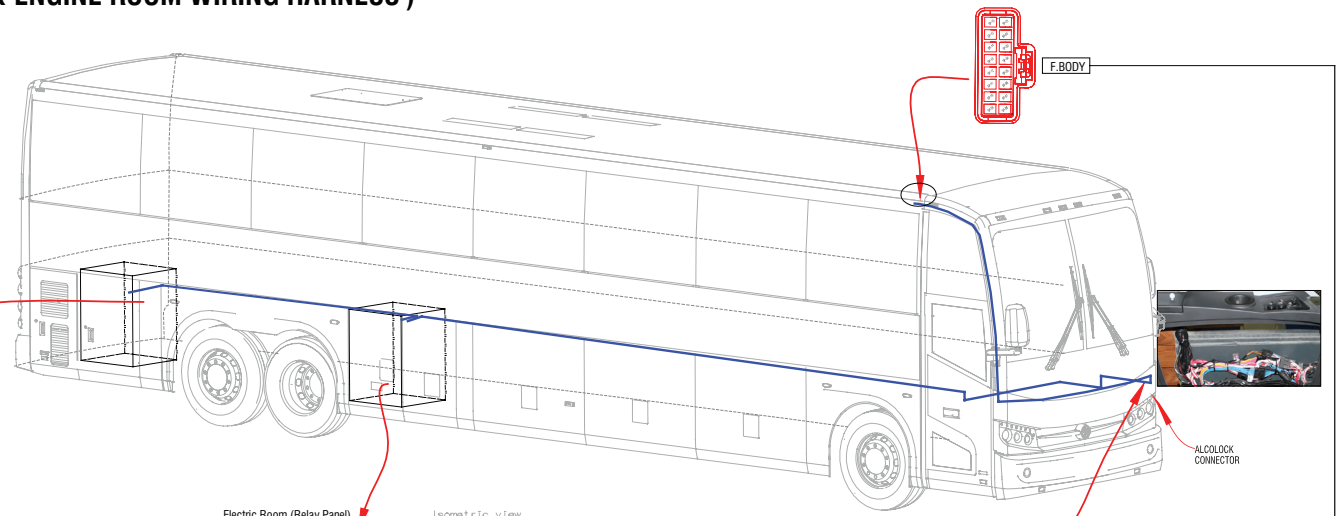
Note: Harness Symbol
xxx Component Label (These red arrows show the approximate locations of labels on harnesses.)

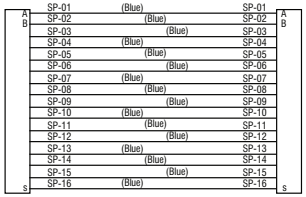
00.3.6 SOCKET CONNECTION LOCATION

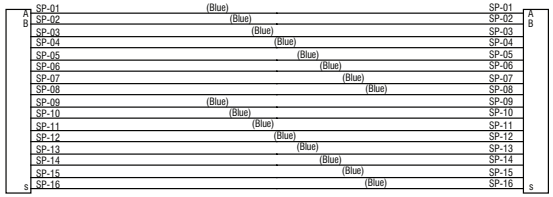


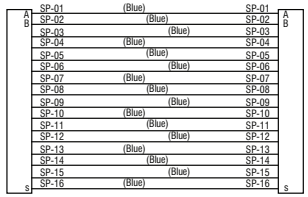
00.3.7 SPARE CABLE (CHASSIS & ENGINE ROOM WIRING HARNESS)

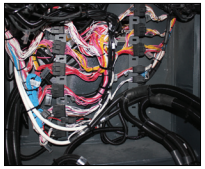


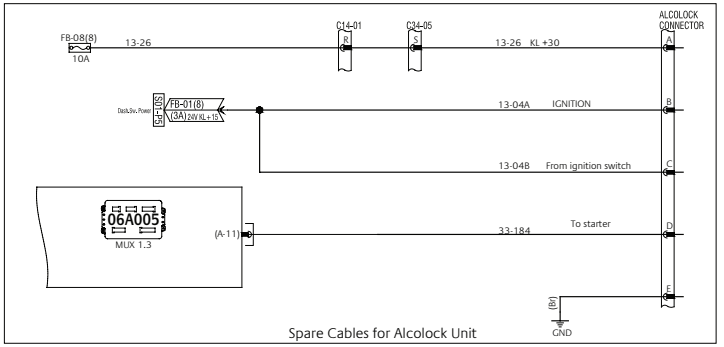






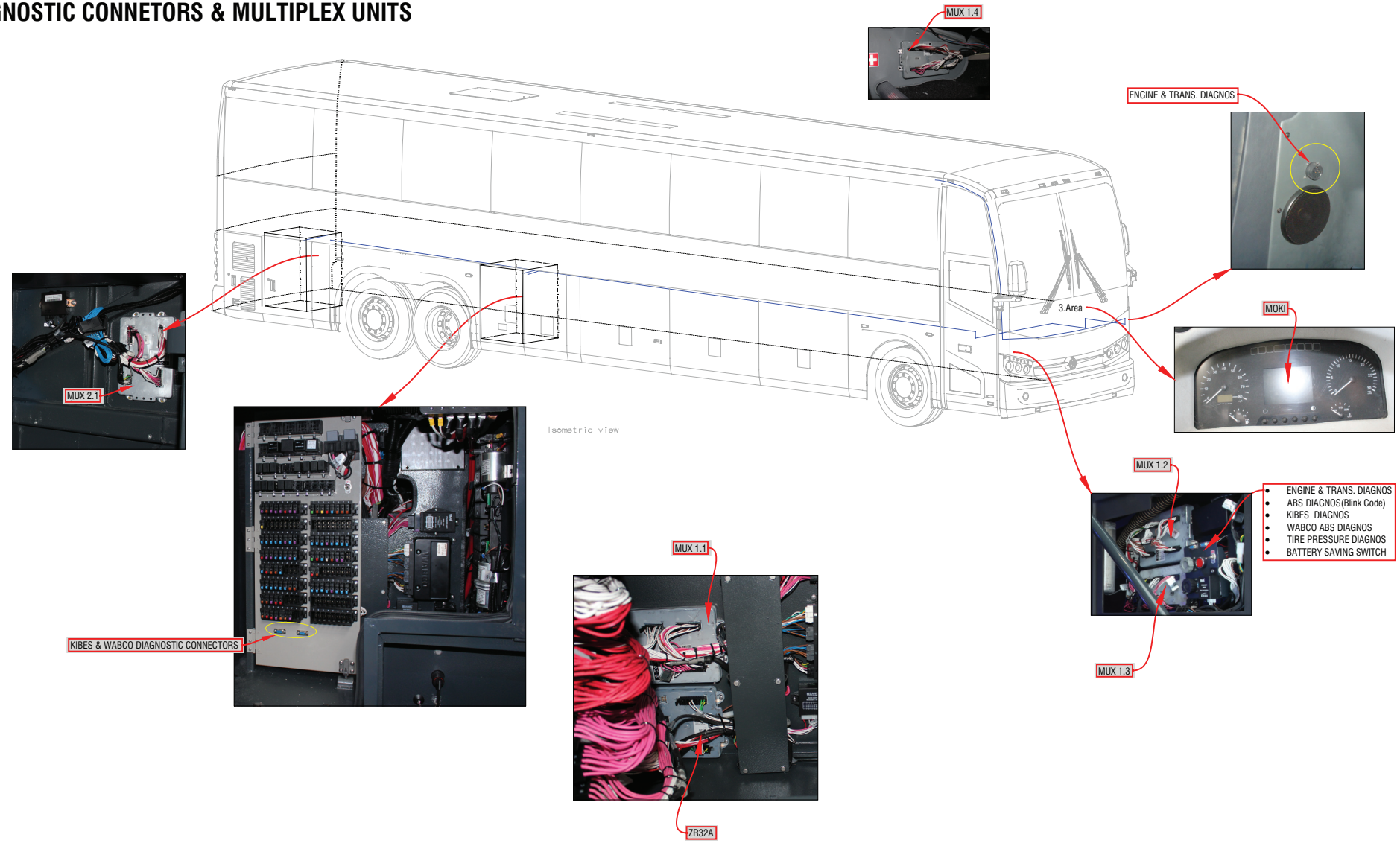






Note: Harness Symbol
xxx Component Label (These red arrows show the approximate locations of labels on harnesses.)

00.3.8 DIAGNOSTIC CONNETORS & MULTIPLEX UNITS



Note: Harness Symbol
xxx Component Label (These red arrows show the approximate locations of labels on harnesses.)

01 POWER SYSTEM

Code List & Locations 32
(S01-P1) Power System Wiring 1 33

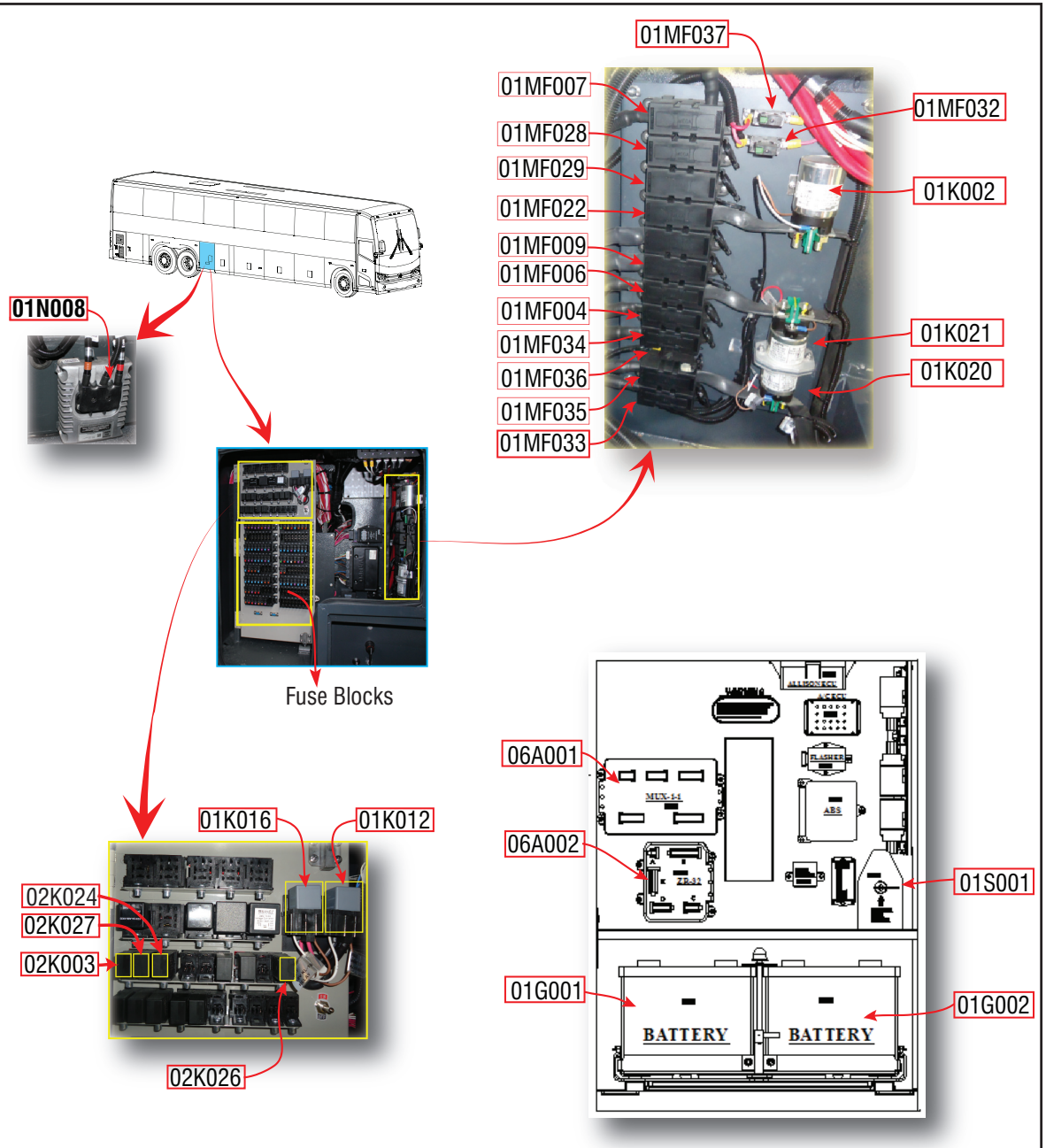
Code List & Locations 34
(S01-P2) Power System Wiring 2 35

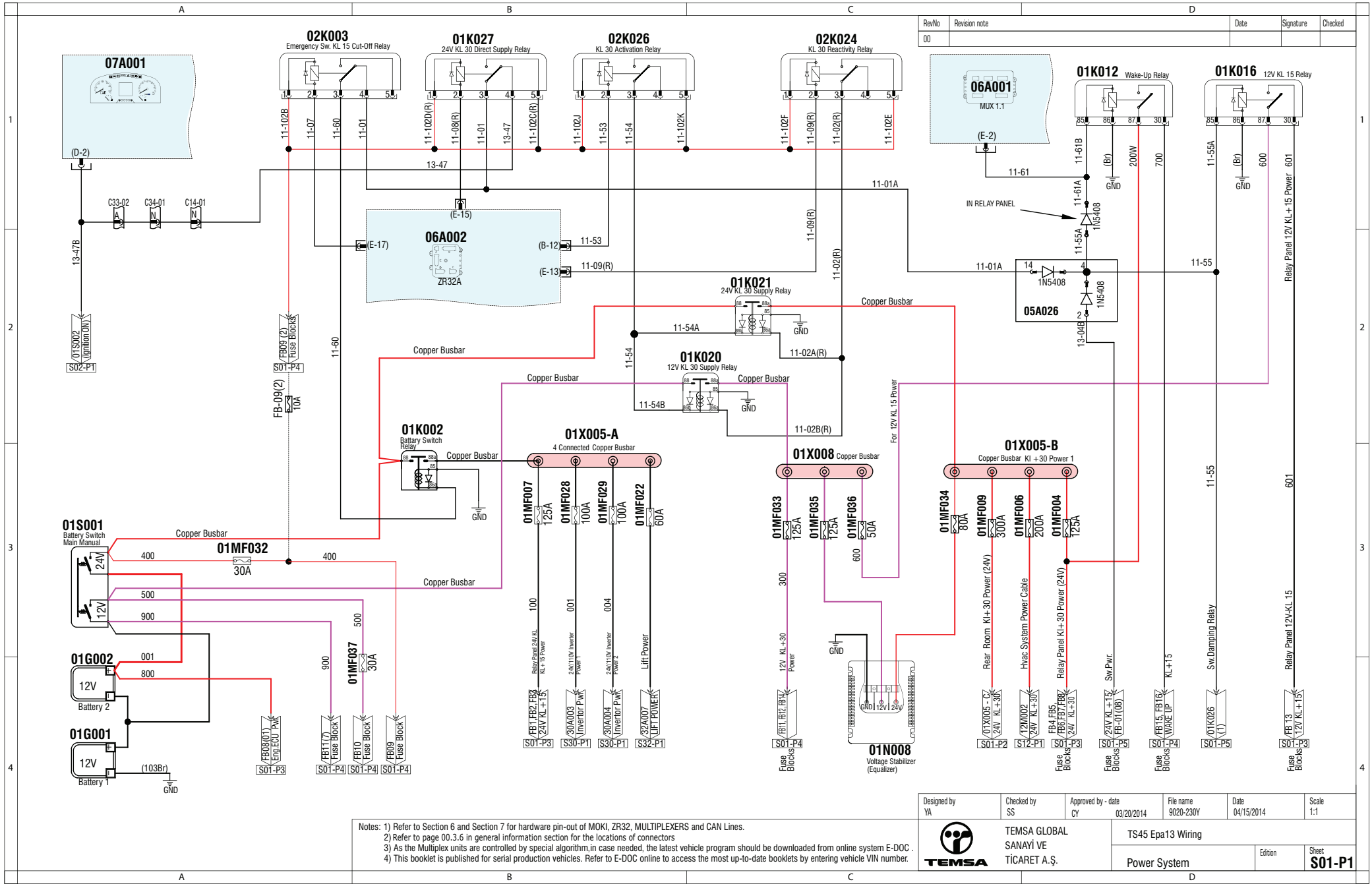
Code List & Locations 36
(S01-P3) Fuses 37

Code List & Locations 38
(S01-P4) Fuses 39

Code List & Locations 40
(S01-P5) Switches Power Supply Wiring 41

Code	Spanish	Français
01G001	Batería 1	Batterie1
01G002	Batería 2	Batterie1
01K002	Relé del Interruptor del Aislamiento Principal	Relais Contacteur Principal De Sécurité
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)
01K016	Relé KI15 de 12V	Relais 12V KI15
01K020	Relé de alimentación de 12V KI 30	12V KI 30 Relais d'alimentation
01K021	Relé de alimentación de 24V KI 30	24V KI 30 Relais d'alimentation
01K027	Relé de suministro directo 24V KL 30	Relé de suministro directo 24V KL 30
01K026	Relé de diagnóstico de amortiguación de voltaje	Relé de diagnóstico de amortiguación de voltaje
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30
01MF006	Alimentación del Aire Acondicionado	Alimentation Du Climatiseur
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
01MF009	Alimentación del KI30 1	Alimentation 1 Du KI30
01MF022	Alimentación del Elevador	Puissance Du Mecanisme De Levage
01MF028	Convertidor de Corriente 1 de 24V/220V	24V/220V Transformateur Puissance 1
01MF029	Convertidor de Corriente 2 de 24V/220V	24V/220V Transformateur Puissance 2
01MF032	Alimentación (suministrada directamente de la batería para información de memoria) de 24V KL-30	24V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
01MF033	Alimentación (suministrada directamente de la batería para información de memoria) de 12V KL-31	12V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
01MF034	Estabilizador de voltaje de alimentación de 24V	Stabilisateur de tension Alimentation 24V
01MF035	Estabilizador de voltaje de alimentación de 12V	Stabilisateur de tension Alimentation 12V
01MF036	Suministro de sistema 12V KL-15	Alimentation du système 12V KL-15
01MF037	Megafusible (80A)	Fusible méga (80A)
01S001	Interruptor Manual Principal de la Batería	Interrupteur Principal À Main Batteries
01S002	Interruptor de Encendido del Contacto	Contacteur Contact Mis
01X005	4 Conductos de barras del Midi Copper conectados	4 Jue de barres de cuivre relie midi
01X008	2 Conductos de barras del Mega Copper conectados	2 bar connecte mega-cuivre
02K003	Relés de Corte KL 15 de Parada de Emergencia	Relais De Coupure KL 15 D'Arret D'Urgence
02K024	Relé de reactividad KL 30	KL 30 Relais de réactivité
02K026	Relé de activación KL 30	KL 30 Relais d'activation
05A026	Grupo de Diodos y Resistencias	Bloc De Diodes Et De Resistances
07A001	Grupo de Instrumentos	Combiné D'Instruments
12M002	Motor del Calefactor del Condensador	Moteur Soufflante Du Condenseur
32A007	Elevador para Minusválidos (Carroll)	Mecanisme De Levage Des Handicapes (Carroll)





RevNo	Revision note	Date	Signature	Checked
00				

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) Refer to page 00.3.6 in general information section for the locations of connectors
3) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
4) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.

Designed by	Checked by	Approved by - date	File name	Date	Scale
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

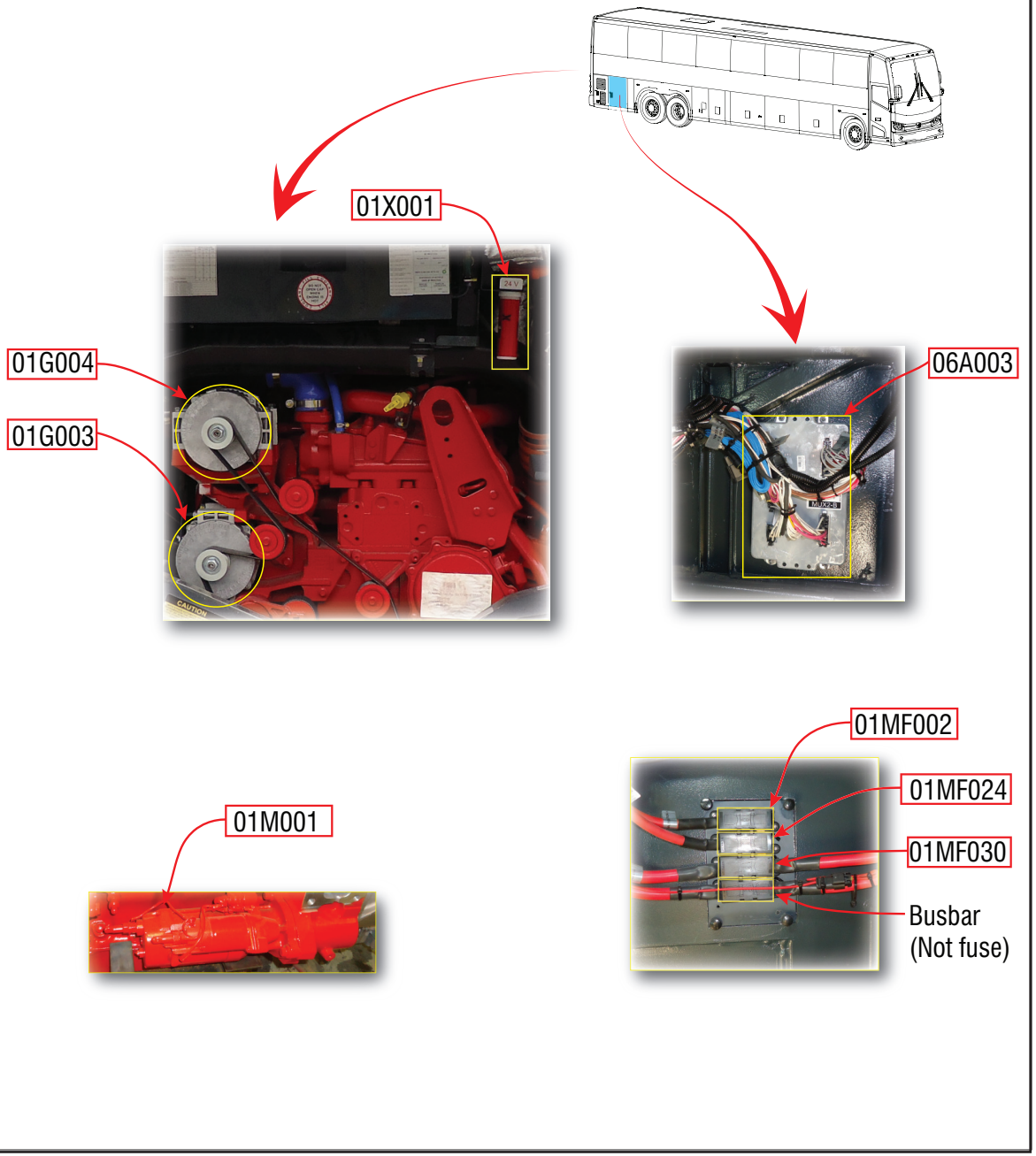
TS45 Epa13 Wiring

Power System

Edition

Sheet S01-P1

Code	Spanish	Français
01G003	Alternador 1	Alternateur 1
01G004	Alternador 2	Alternateur 2
01M001	Motor de Arranque	Démarreur
01MF002	Alimentación del Alternador 1	Alimentation De L'Alternateur 1
01MF009	Alimentación del KI30 1	Alimentation 1 Du KI30
01MF024	Alimentación del Alternador 2	Puissance D'Alternateur 2
01MF030	Polo positivo de la batería de la caja asegurada	Batterie pole positif de la boite avec valeur declaree
01R001	150 Ohm 5 W	150 Ohm 5 W
01X001	Conector de Carga de la Batería	Connecteur Du Chargeur De Batterie
01X005	4 Conductos de barras del Midi Copper conectados	4 Jue de barres de cuivre relie midi
06A001	Multiplexor 1.1	Mux 1.1
06A003	Multiplexor 2,1	Mux 2.1



RevNo	Revision note	Date	Signature	Checked
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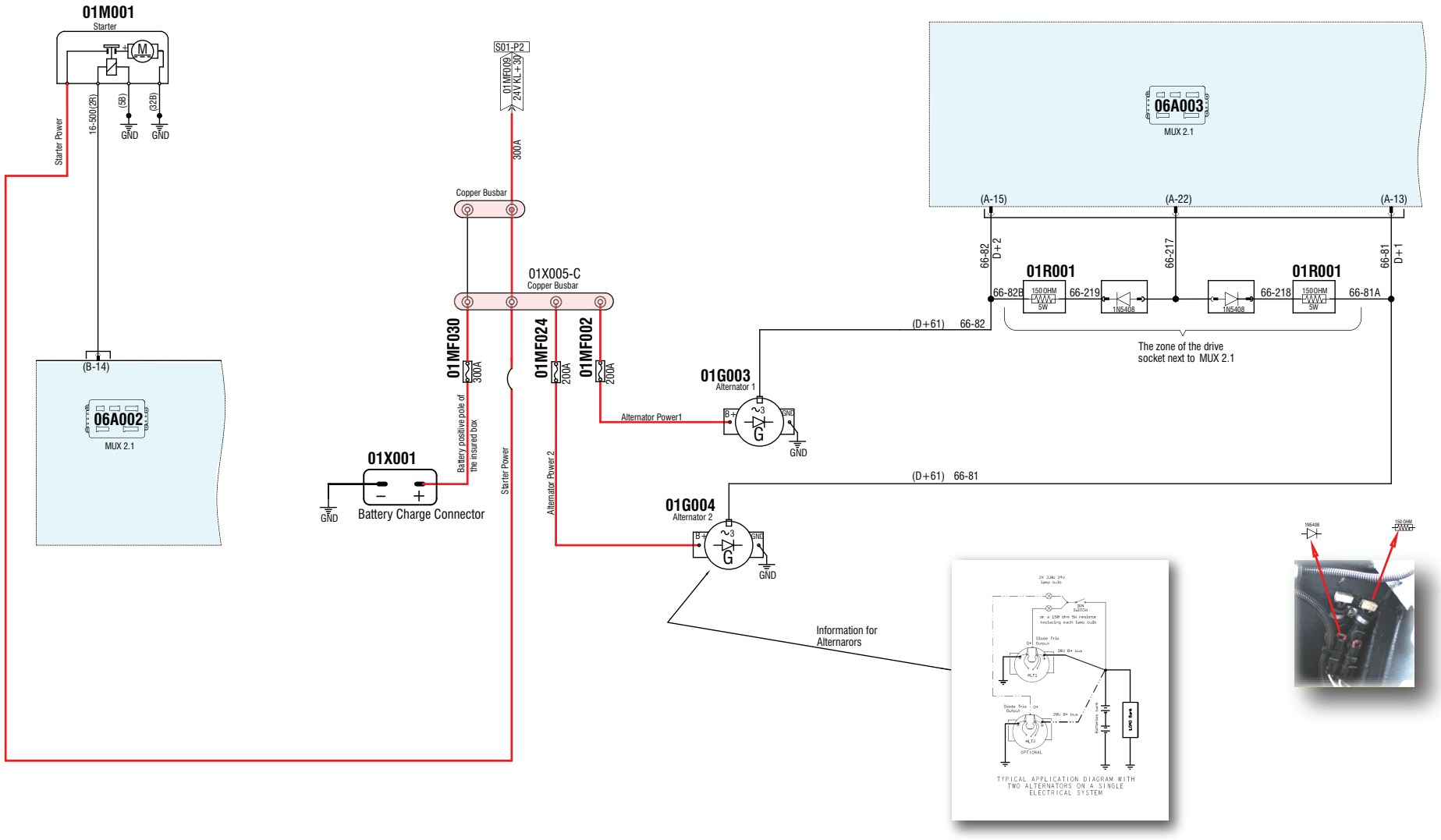

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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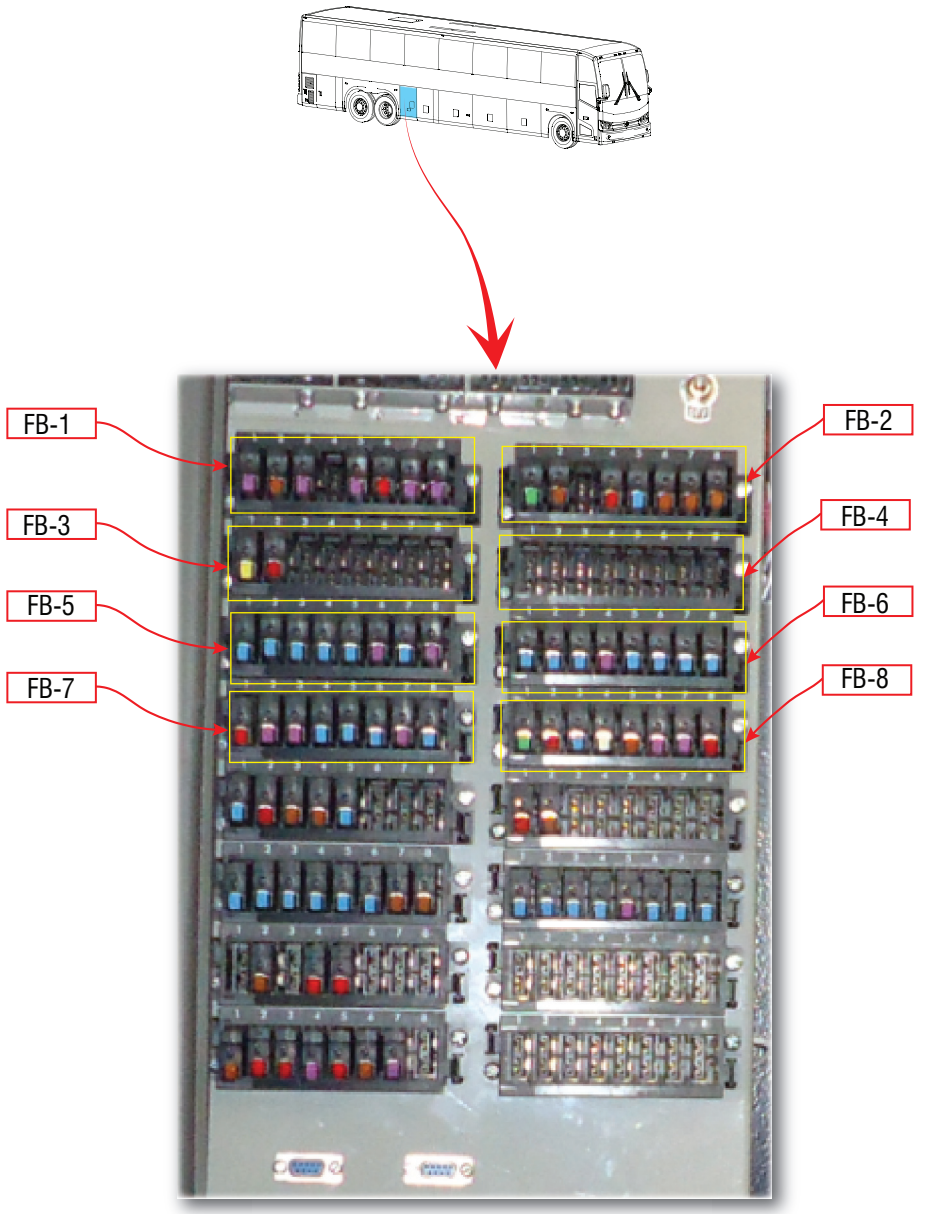
Designed by	Checked by	Approved by - date	File name	Date	Scale
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

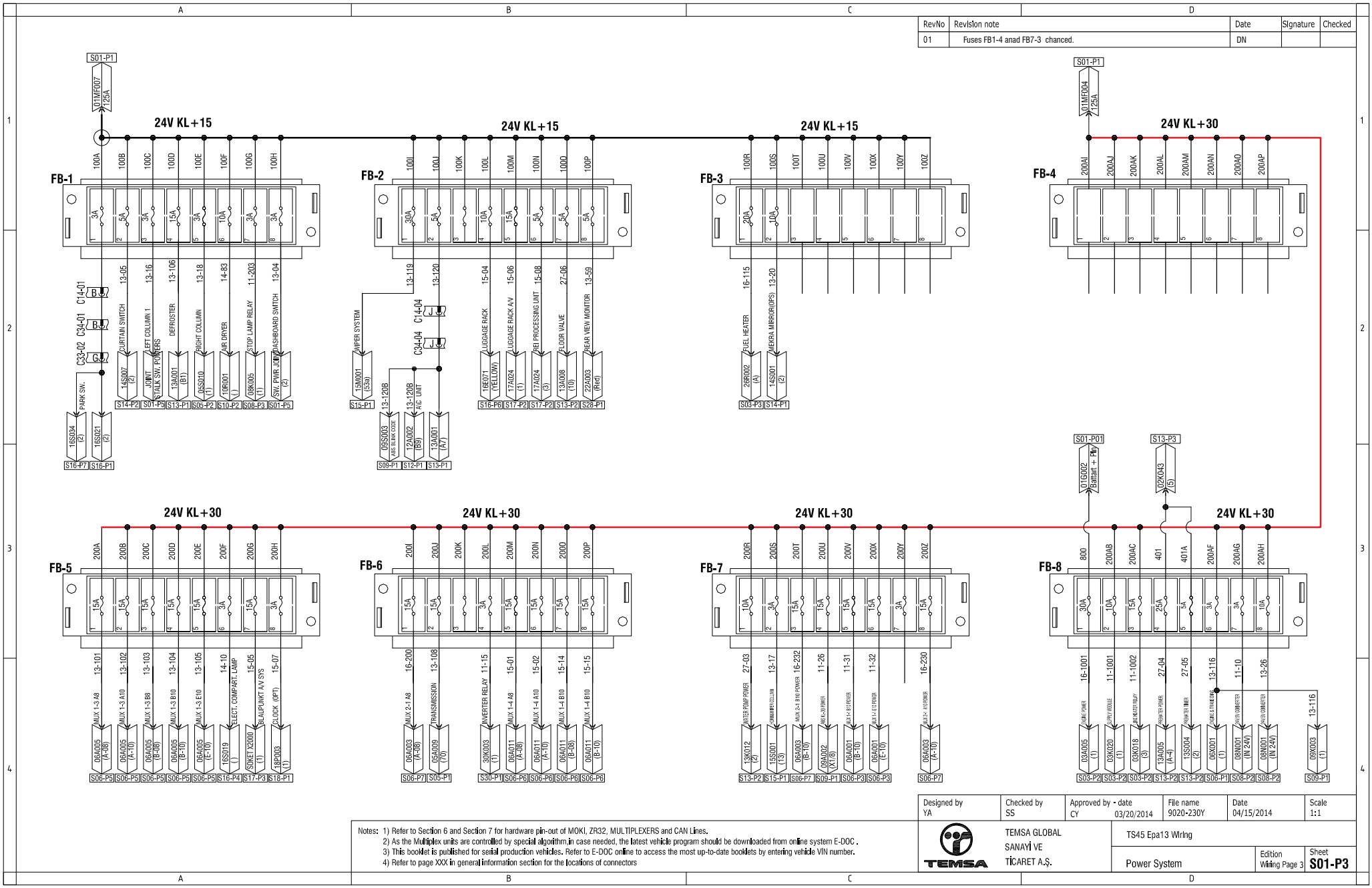
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Power System | Edition | Sheet S01-P2

Code	Spanish	Français
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
03A005	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)
03K018	Relé de calentamiento de línea de fluido de urea	Relais de chauffage de la ligne de fluide de l'urée
03K020	Relé del motor de arranque Cummins	Relais du démarreur Cummins
05A009	Unidad de Control de Transmisión Automática Allison	Transmission Automatique Voith
05K005	Caja de Cambios Automática de Relé de Velocidad	Relais Tachymetrique De La Boite De Vitesses
05S010	Palanca del Retardador / Control de Velocidad Crucero	Levier De Ralentisseur-Relais Tempomat
06A001	Multiplexor 1.1	Mux 1.1
06A003	Multiplexor 2,1	Mux 2.1
06A005	Multiplexor 1,3	Mux 1.3
06A011	Multiplexor 1,4	Mux 1.4
06X001	Toma de Conexión para Herramientas de Diagnóstico del Cuadro de Mandos J1939/J1587	Prise Diagnostic Can J1939/J1587
08K005	Relé de Luz de Parada	Relais Du Feu D'Arrêt
09A002	Módulo de Control Electrónico de ABS (WABCO)	Calculateur Système Antiblocage Abs
09S003	Interruptor de Diagnóstico (Abs)	Prise De Diagnostic
09X003	Toma de Conexión para Diagnóstico del ABS Wabco	Culot De Diagnostic Abs Wabco
10R001	Secador de Aire	Dessiccateur D'Air
12A002	Unidad de Control del Climatizador	Unite De Commande Hvac
13A001	Unidad de Control del Desempañador del Climatizador	Unite De Commande Du Systeme De Degivrage Hvac
13A005	Unidad de Precalentador	Unite Du Prechauffeur
13A008	Unidad del Temporizador del Precalentador	Unite De Minuterie Du Prechauffeur
13K012	Relé de la Bomba de Agua del Circuito Central	Relais Pompe À Eau Circuit Central
14S001	Interruptor de Ajuste de Espejos	Contacteur Réglage Du Rétroviseur
14S007	Interruptor de Visera Parasol del Conductor	Contacteur Du Pare-Soleil Cote Conducteur
15M001	Motor del Limpiaparabrisas	Moteur Essuie-Glace
15S001	Interruptor del Limpiaparabrisas y de los Limpias	Contacteur D'Essuie-Glaces Et De Lave-Glaces
16E071	Lámparas de Lectura, Derecha	Lampes De Lecture, Droit
16S019	Interruptor de Lámparas de Iluminación del Panel de Relés Delantero	Contacteur De La Lampe D'Eclairage Du Panneau De Relais Avant
16S021	Interruptor de Luces de Estacionamiento	Contacteur Feu De Stationnement‹
16S034	Interruptor de ajuste de intensidad de luz	Interrupteur d'ajustement de l'intensité de la lumière
17A024	Ordenador de a bordo del sistema AVM (UPL 090)	Ordinateur de bord pour système AVM (UPL 090)
18P003	Pantalla de Temperatura y Hora	Affichage De Temperature Et De Temps
22A003	Monitor de Control de Marcha Atrás (Waeco)	Moniteur De Surveillance De Marche Arriere (Waeco)
30K003	Relé de Inversor Activo 24V/110V	24V/110V Actif Relais De Transformateur

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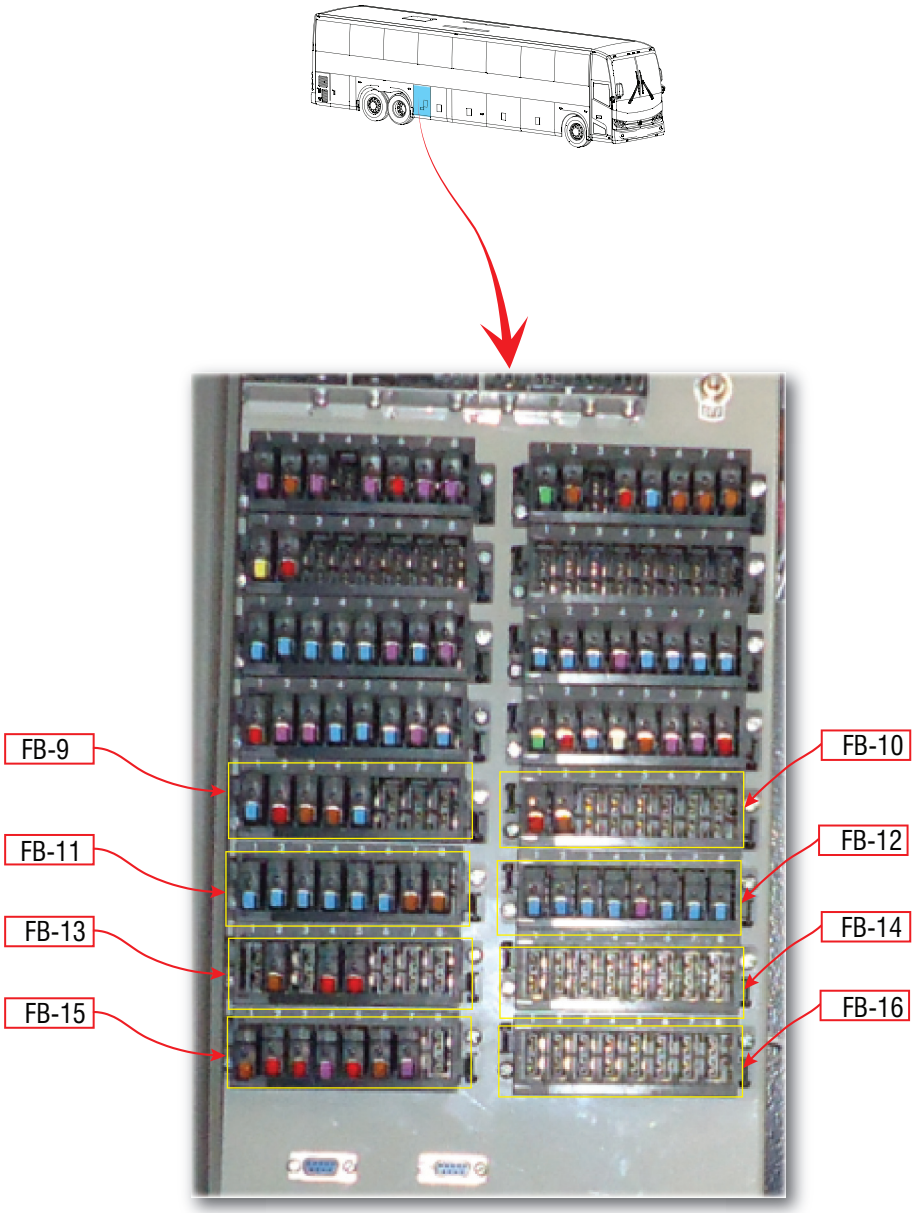
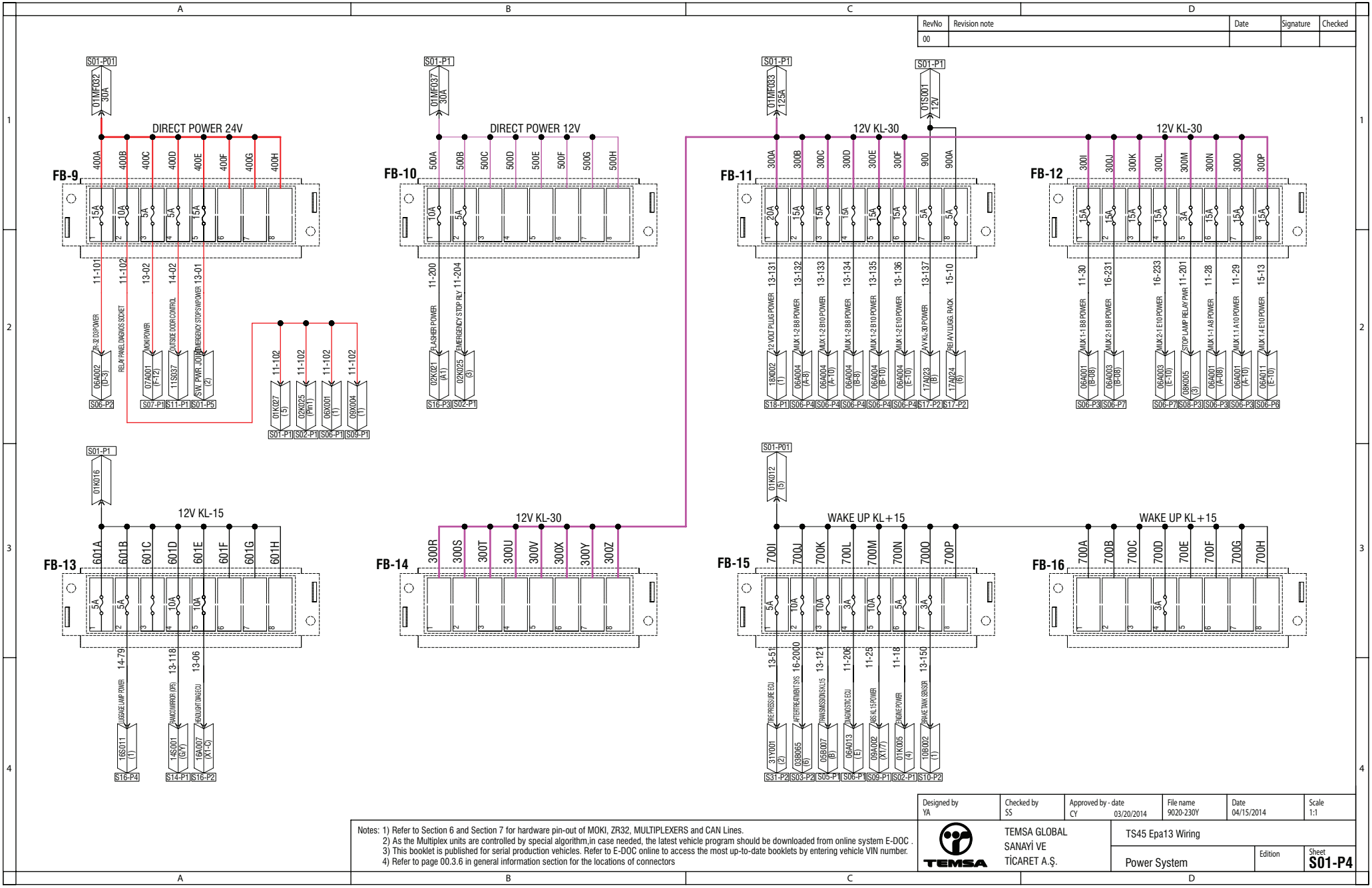
FB-1
FB-2
FB-3
FB-4
FB-5
FB-6
FB-7
FB-8
24V KL+15
24V KL+30
S01-P1
01MF007 125A
01MF004 125A
01G002 Battart + Pltv
02K043 (5)
S01-P01
S13-P3
CURTAIN SWITCH
LEFT COLUMN 1
DEFROSTER
RIGHT COLUMN
AIR DRYER
STOP LAMP RELAY
DASHBOARD SWITCH
WIPER SYSTEM
LUGGAGE RACK
LUGGAGE RACK A/V
DEI PROCESSING UNIT
FLOOR VALVE
REAR VIEW MONITOR
FUEL HEATER
MEKRA MIRROR(OPS)
PARK SW.
ABS BLINK CODE
A/C UNIT
TRANSMISSION
INVERTER RELAY
ELECT. COMPART. LAMP
CLOCK (OPT)
Designed by YA
Checked by SS
Approved by - date CY 03/20/2014
File name 9020-230Y
Date 04/15/2014
Scale 1:1
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
Power System
Edition Wiring Page 3
Sheet S01-P3
Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page XXX in general information section for the locations of connectors

Code	Spanish	Français
01K005	Relé de Parada del Motor	Relais Arrêt Du Moteur
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)
01K016	Relé KI15 de 12V	Relais 12V KI15
01K027	Relé de suministro directo 24V KL 30	Relé de suministro directo 24V KL 30
01MF032	Alimentación (suministrada directamente de la batería para información de memoria) de 24V KL-30	24V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
01MF033	Alimentación (suministrada directamente de la batería para información de memoria) de 12V KL-31	12V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
01MF037	Megafusible (80A)	Fusible méga (80A)
01S001	Interruptor Manual Principal de la Batería	Interrupteur Principal À Main Batteries
02K021	Relé del Intermitente (Puerta abierta)	Relais clignotant (Portière ouverte)
02K025	Relé de parada de emergencia (para sistema de 12V)	Relais d'arrêt d'urgence (pour un système de 12V)
03B065	Sensor de temperatura, nivel DEF	Niveau DEF, capteur de température
05B007	Sensor de Presión Allison 3	Capteur De Pression Allison 3
06A001	Multiplexor 1.1	Mux 1.1
06A002	Zr32-E	Zr32-E
06A003	Multiplexor 2,1	Mux 2.1
06A004	Multiplexor 1,2	Mux 1.2
06A011	Multiplexor 1,4	Mux 1.4
06A013	Unidad de control de diagnóstico	Unidad de control de diagnóstico
06X001	Toma de Conexión para Herramientas de Diagnóstico del Cuadro de Mandos J1939/J1587	Prise Diagnostic Can J1939/J1587
07A001	Grupo de Instrumentos	Combiné D'Instruments
08K005	Relé de Luz de Parada	Relais Du Feu D'Arrêt
09A002	Módulo de Control Electrónico de ABS (WABCO)	Calculateur Système Antiblocage Abs
09X004	Toma de Conexión para Diagnóstico del ABS Wabco	Culot De Diagnostic Abs Wabco 2
10B002	Sensor de Presión de Aire 1 (Depósito de Aire) (Freno Delantero)	Manocontacteur Pression De Réserve Correction D'Assiette Nr
11S037	Interruptor 1 de luz de pared de compuerta frontal	Interrupteur d'alimentation du mur de la porte avant_1
14S001	Interruptor de Ajuste de Espejos	Contacteur Réglage Du Rétroviseur
16A007	Módulo de faro de luz diurna lado	Calculateur du phare de jour
16S011	Interruptor de Puerta del Maletero (Izquierda 4)	Contacteur Porte De Compartiment À Bagages
16K007	Relé de Lámparas de Lectura	Relais Lampes De Lecture
17A023	Amplificador de energía (REI)	Amplificateur De Alimentation (REI)
17A024	Ordenador de a bordo del sistema AVM (UPL 090)	Ordinateur de bord pour système AVM (UPL 090)
18X002	Enchufe 12V	Prise 12V




RevNo
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Date
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00
DIRECT POWER 24V
DIRECT POWER 12V
12V KL-30
12V KL-30
12V KL-15
12V KL-30
WAKE UP KL+15
WAKE UP KL+15
FB-9
FB-10
FB-11
FB-12
FB-13
FB-14
FB-15
FB-16
Designed by
YA
Checked by
SS
Approved by - date
CY 03/20/2014
File name
9020-230Y
Date
04/15/2014
Scale
1:1
Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
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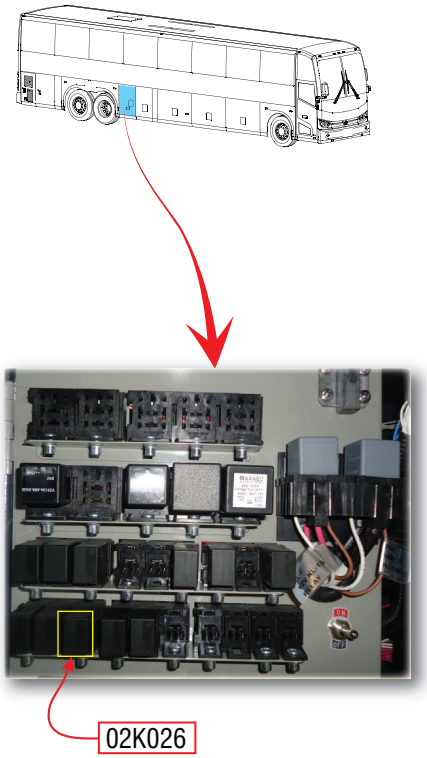
4) Refer to page 00.3.6 in general information section for the locations of connectors
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
Power System
Edition
Sheet
S01-P4

Code	Spanish	Français
01K016	Relé KI15 de 12V	Relais 12V KI15
01K027	Relé de suministro directo 24V KL 30	Relé de suministro directo 24V KL 30
02S001	Interruptor de Señalización de Peligro	Contacteur Feux De Détresse
03S002	Interruptor de Control de Crucero Activo	Bouton De Commande Regulateur De Vitesses
05A026	Grupo de Diodos y Resistencias	Bloc De Diodes Et De Resistances
05S011	Interruptor de Desactivación del Control de Freno de Pie del Retardador	Interrupteur De Commande De Frein Au Pied De Ralentisseur
09S002	Interruptor Asr	Commutateur Régulation Antipatinage Asr
10S001	Interruptor de Válvula de Nivelación	Commande Soupape De Stabilisation
10S009	Interruptor de descarga del eje	Interruptor de descarga del eje
11S002	Interruptor de Control de Puerta Delantera	Contacteur Porte 1 Conducteur
14S002	Interruptor del Espejo Térmico	Contacteur Chauffage Du Rétroviseur
14S005	Interruptor de Luneta Térmica de Ventana del Conductor	Contacteur Chauffage De Vitre Du Conducteur
16S013	Interruptor de Intermitentes (en Interruptor de Columna de Dirección Combinacional)	Contacteur De Clignotant (Sur Contacteur Combinatoire De La Colonne De Direction)
16S014	Interruptor de Iluminación Nocturna	Contacteur Éclairage De Nuit
16S017	Interruptor de Iluminación de Pasillo	Contacteur Éclairage Couloir Central
16S020	Interruptor de Faros Antiniebla Delanteros	Contacteur Des Feux Antibrouillard Avant
16S022	Interruptor de Iluminación del Conductor	Contacteur Lampe Du Poste Du Conducteur
16S024	Interruptor de Faro (en Interruptor Izquierdo de Columna de Dirección Combinacional)	Contacteur De Phares (Sur Contacteur Combinatoire De La Colonne De Direction)
18S001	Interruptor Selector de Claxon	Contacteur De Commande De Klaxon
18S002	Interruptor del Claxon	Contacteur De Klaxon
18S003	Interruptor de Control de Dirección	Commutateur De Commande De Dirigeabilite
20S001	Interruptor de Apagado del WC	Contacteur Du Systeme D'Arret Des Toilettes
24S003	Interruptor de Cierre Centralizado	Contacteur Du Verrouillage Central
32S007	Interruptor del Elevador para Minusválidos (Elevador Abierto)	Contacteur Du Mecanisme De Levage Pour Personne Handicapee (Ascenseur Ouvert)
30S003	Interruptor del Inversor 24/110V	Contacteur D'Inversion 24/110V
18S010		Autonomie de commutateur de sauvegarde
01K026	Relé de diagnóstico de amortiguación de voltaje	Relé de diagnóstico de amortiguación de voltaje



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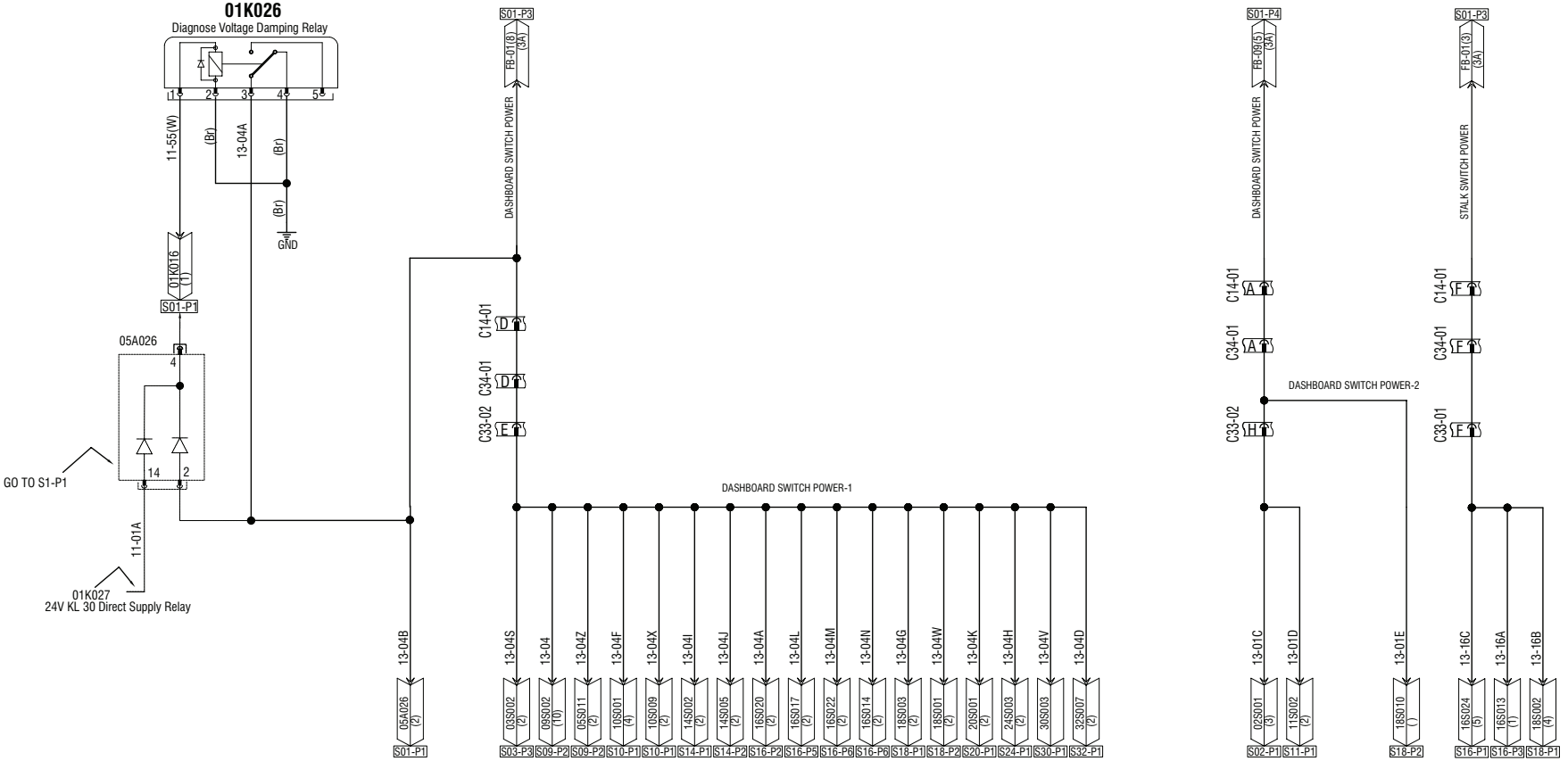

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
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4) Refer to page 00.3.6 in general information section for the locations of connectors

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

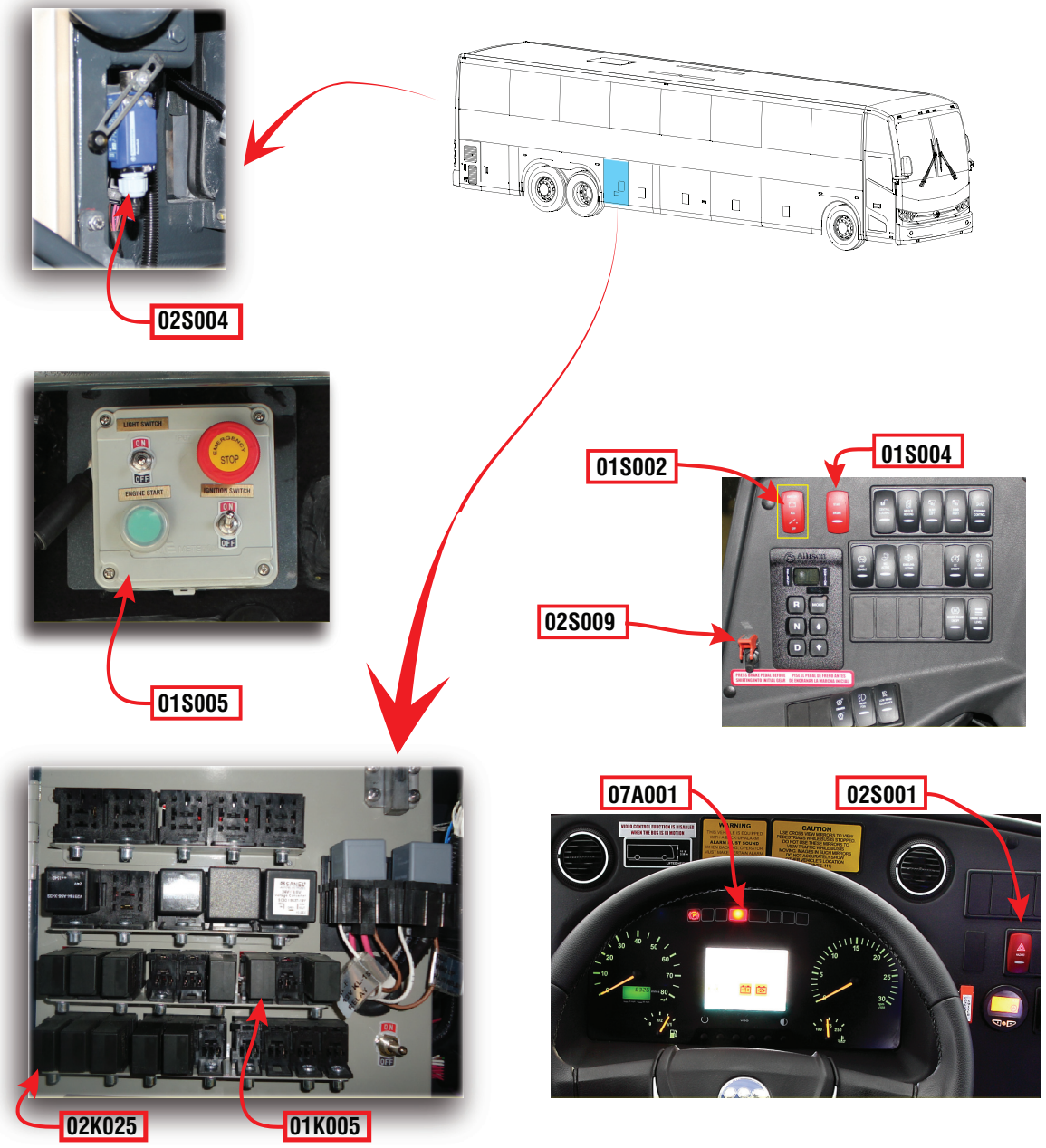
Power System | Edition | Sheet S01-P5

02

IGNITION ON/OFF, ENGINE START/STOP , EMERGENCY STOP SYSTEMS

Code List & Locations 44
(S02-P1) Ignition ON /OFF, Engine Start Stop Control & Emergency Stop 45
(Software Sheet) Engine Start Stop Control 47

Code	Spanish	Français
01K005	Relé de Parada del Motor	Relais Arrêt Du Moteur
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)
01K016	Relé KI15 de 12V	Relais 12V KI15
01K027	Relé de suministro directo 24V KL 30	Relé de suministro directo 24V KL 30
01MF032	Alimentación (suministrada directa-mente de la batería para información de memoria) de 24V KL-30	24V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
01S002	Interruptor de Encendido del Contacto	Contacteur Contact Mis
01S004	Interruptor de Control de Arranque/ Parada del Motor	Contacteur De Commande Demarrage Arrêt Du Moteur
01S005	Interruptor de Arranque/Parada del Compartimento del Motor	Commutateur Demarrage Arrêt Du Bloc Moteur
02K025	Relé de parada de emergencia (para sistema de 12V)	Relais d'arrêt d'urgence (pour un système de 12V)
02S001	Interruptor de Señalización de Peligro	Contacteur Feux De Détresse
02S004	Interruptor de la puerta de seguridad del Compartimento del Motor	Couvercle du Compartiment Moteur interrupteur de securite
02S009	Interruptor de Parada de Emergencia	Interrupteur Arret D'Urgence
03A005	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)
05A026	Grupo de Diodos y Resistencias	Bloc De Diodes Et De Resistances
06A001	Multiplexor 1.1	Mux 1.1
06A002	Zr32-E	Zr32-E
06A003	Multiplexor 2,1	Mux 2.1
07A001	Grupo de Instrumentos	Combiné D'Instruments
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur



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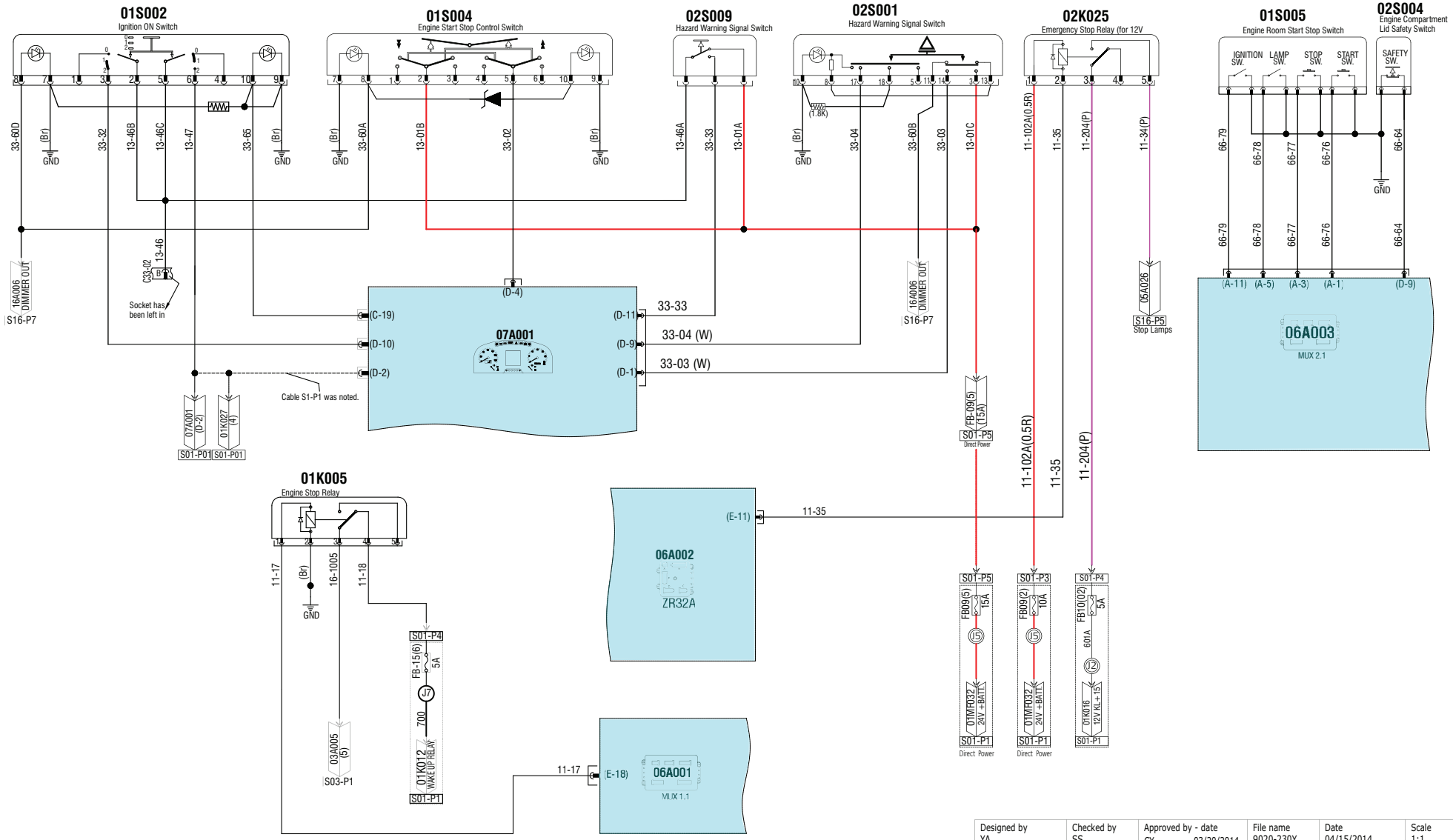

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Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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4) Refer to page 00.3.6 in general information section for the locations of connectors

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

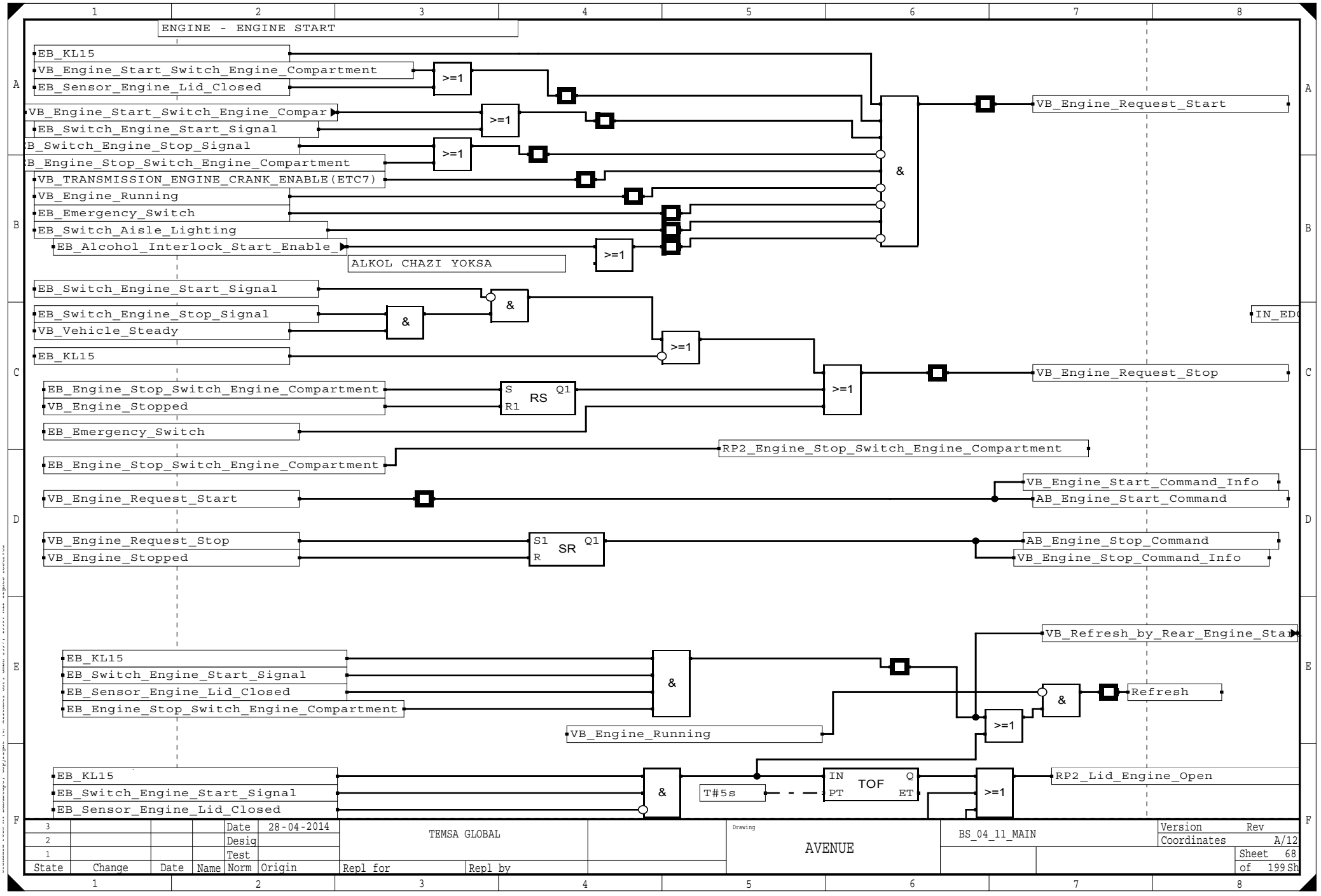
TS45 Epa13 Wiring

Ignition On/Off, Engine Start/Stop and Emergency Stop

Edition

Sheet **S02-P1**




ENGINE - ENGINE START
EB_KL15
VB_Engine_Start_Switch_Engine_Compartment
EB_Sensor_Engine_Lid_Closed
VB_Engine_Start_Switch_Engine_Compar
EB_Switch_Engine_Start_Signal
B_Switch_Engine_Stop_Signal
B_Engine_Stop_Switch_Engine_Compartment
VB_TRANSMISSION_ENGINE_CRANK_ENABLE(ETC7)
VB_Engine_Running
EB_Emergency_Switch
EB_Switch_Aisle_Lighting
EB_Alcohol_Interlock_Start_Enable_
ALKOL CHAZI YOKSA
>=1
&
VB_Engine_Request_Start
EB_Switch_Engine_Start_Signal
EB_Switch_Engine_Stop_Signal
VB_Vehicle_Steady
EB_KL15
IN_ED
EB_Engine_Stop_Switch_Engine_Compartment
VB_Engine_Stopped
S
R1
RS
Q1
VB_Engine_Request_Stop
EB_Emergency_Switch
RP2_Engine_Stop_Switch_Engine_Compartment
EB_Engine_Stop_Switch_Engine_Compartment
VB_Engine_Start_Command_Info
VB_Engine_Request_Start
AB_Engine_Start_Command
VB_Engine_Request_Stop
VB_Engine_Stopped
S1
R
SR
AB_Engine_Stop_Command
VB_Engine_Stop_Command_Info
VB_Refresh_by_Rear_Engine_Star
EB_KL15
EB_Switch_Engine_Start_Signal
EB_Sensor_Engine_Lid_Closed
EB_Engine_Stop_Switch_Engine_Compartment
Refresh
VB_Engine_Running
EB_KL15
EB_Switch_Engine_Start_Signal
EB_Sensor_Engine_Lid_Closed
T#5s
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Q
ET
RP2_Lid_Engine_Open
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Coordinates
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Sheet 68
of 199 Sh
State
Change
Date
Name

03

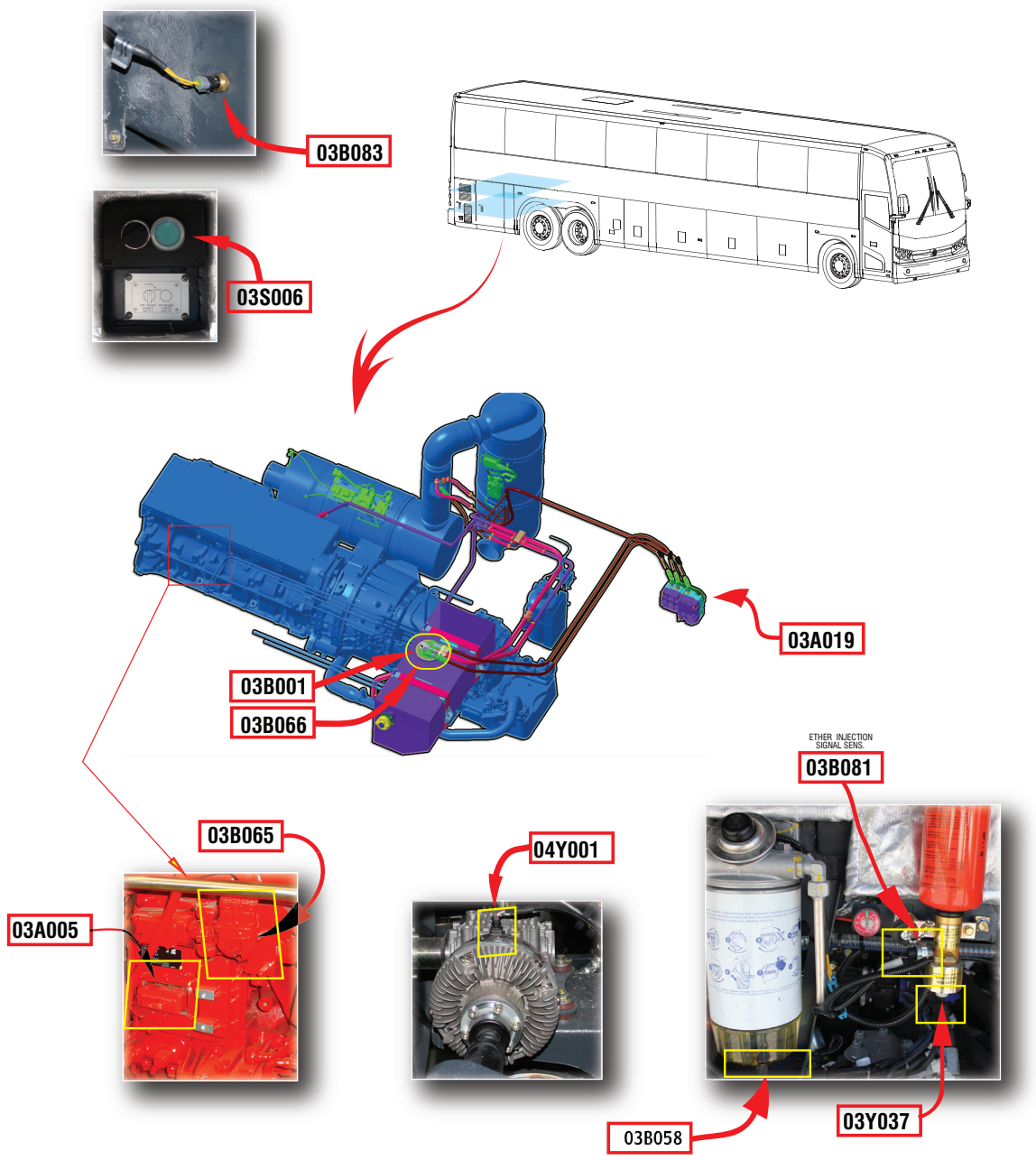
ENGINE CONTROL UNIT, ENGINE WATER COOLING & MOTORFAN SYSTEMS

Code List & Locations 50
(S03-P1) Engine System Wiring 1 51

Code List & Locations 52
(S03-P2) Engine System Wiring 2 53

Code List & Locations 54
(S03-P3) Engine System Wiring 3 55

Code	Spanish	Français
01G001	Batería 1	Batterie1
01K005	Relé de Parada del Motor	Relais Arrêt Du Moteur
03B001	Sensor de Nivel del Depósito DEF/de Temperatura	Capteur Niveau De Remplissage/Température Réservoir DEF
03B006	Interrupteur Position D'Embrayage	Interruttore Posizione Frizione
03B058	Sensor de Agua en el Combustible (Lado del Motor)	Capteur D'Eau Dans Le Carburant (Cote Moteur)
03B065	Sensor de temperatura, nivel DEF	Niveau DEF, capteur de température
03S006	Interruptor de Control del Filtro de PD	Commutateur De Contrôle DPF
03Y037	inyección de éter	injection d'éther
04Y001	Válvula Proporcional (Radiador)	Soupape Proportionnelle (Radiateur)
06A003	Multiplexor 2,1	Mux 2.1
03B081	Sensor de inyección de éter	Capteur d'injection d'éther
03A005	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)
03B083		



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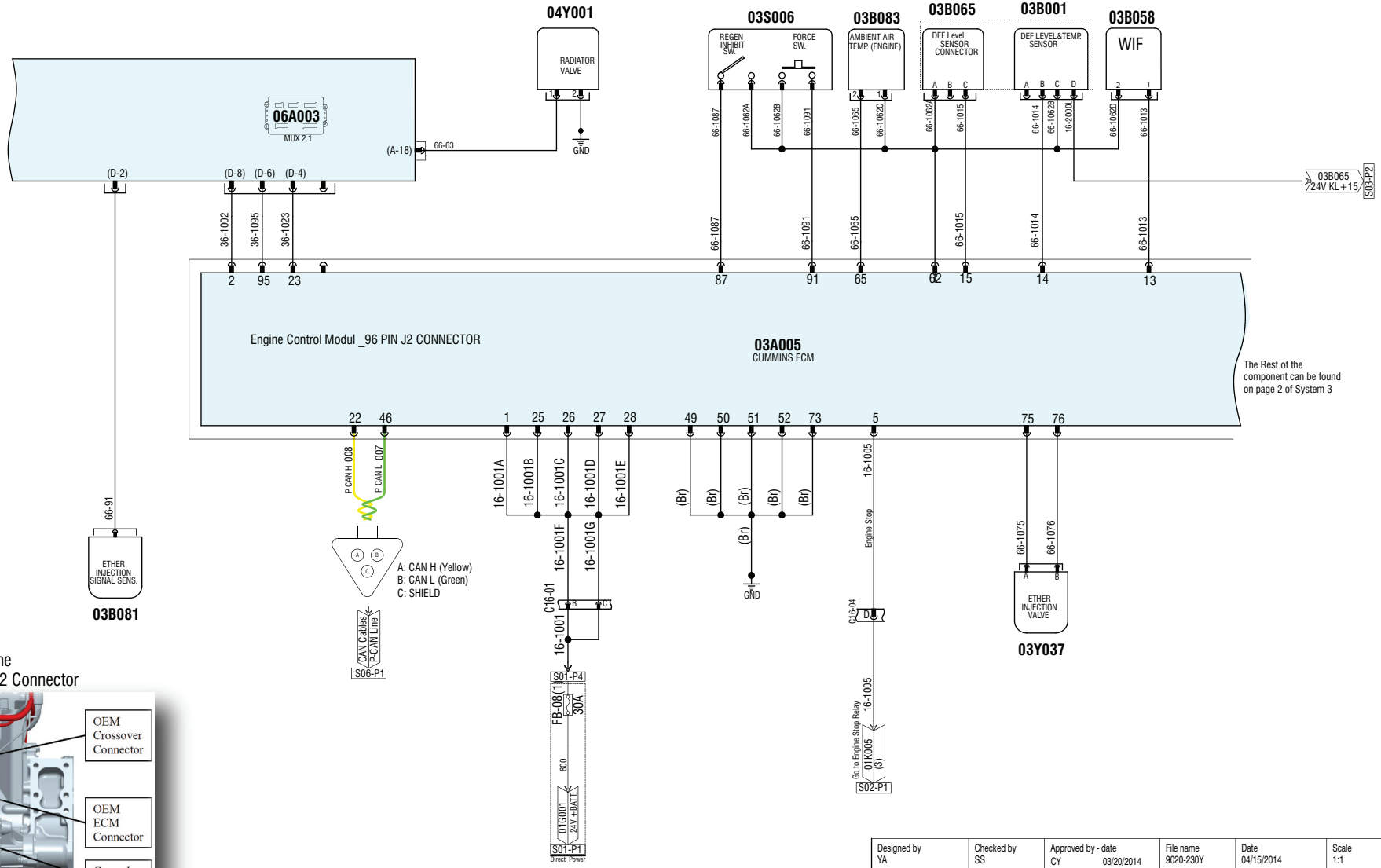
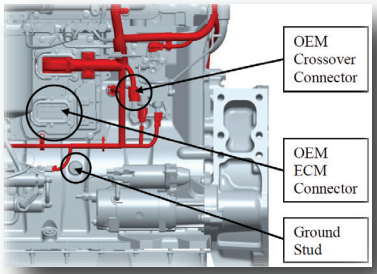


Cummins Engine
CM2350 J2 Connector



Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

Designed by	Checked by	Approved by - date	File name	Date	Scale
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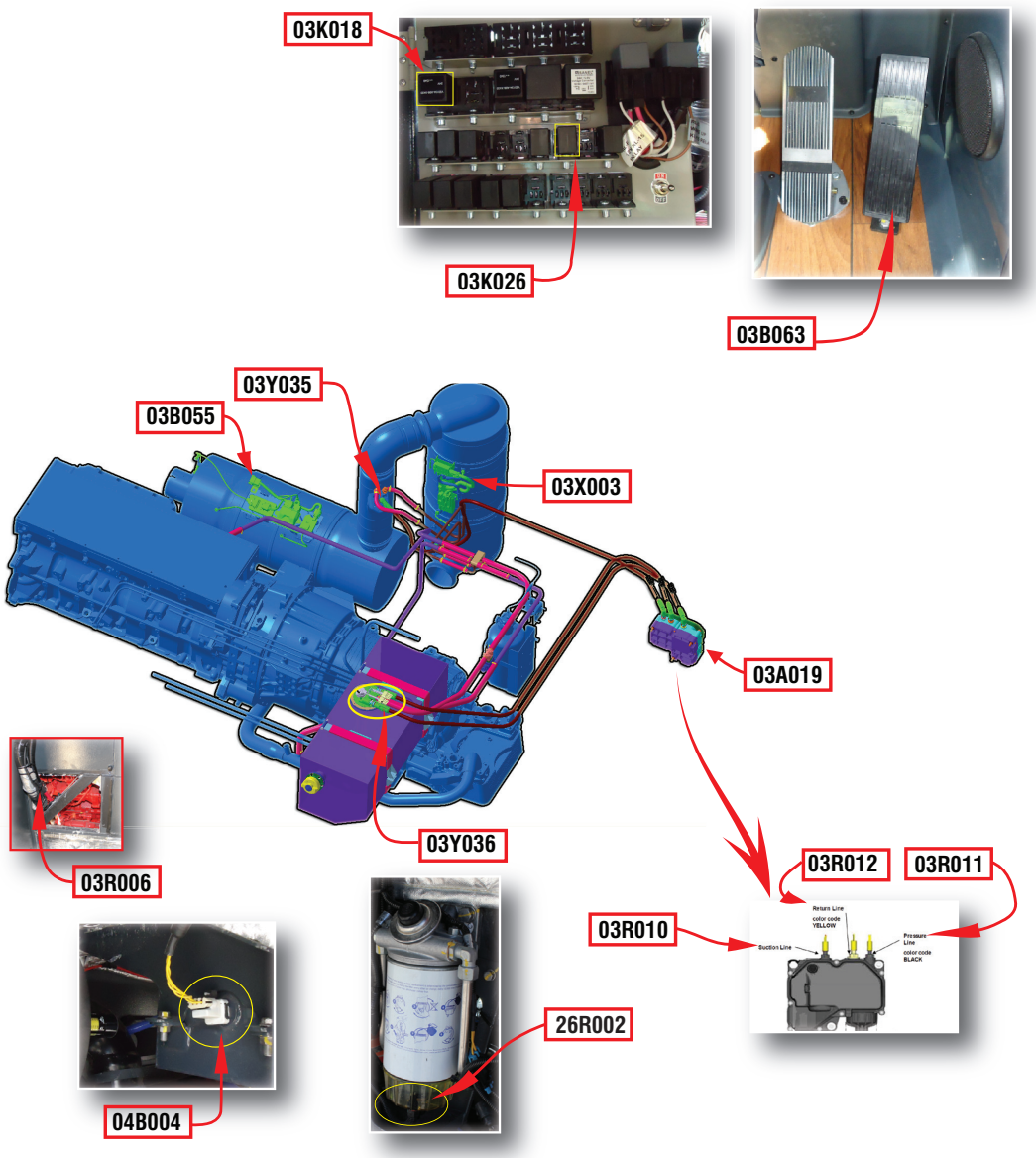
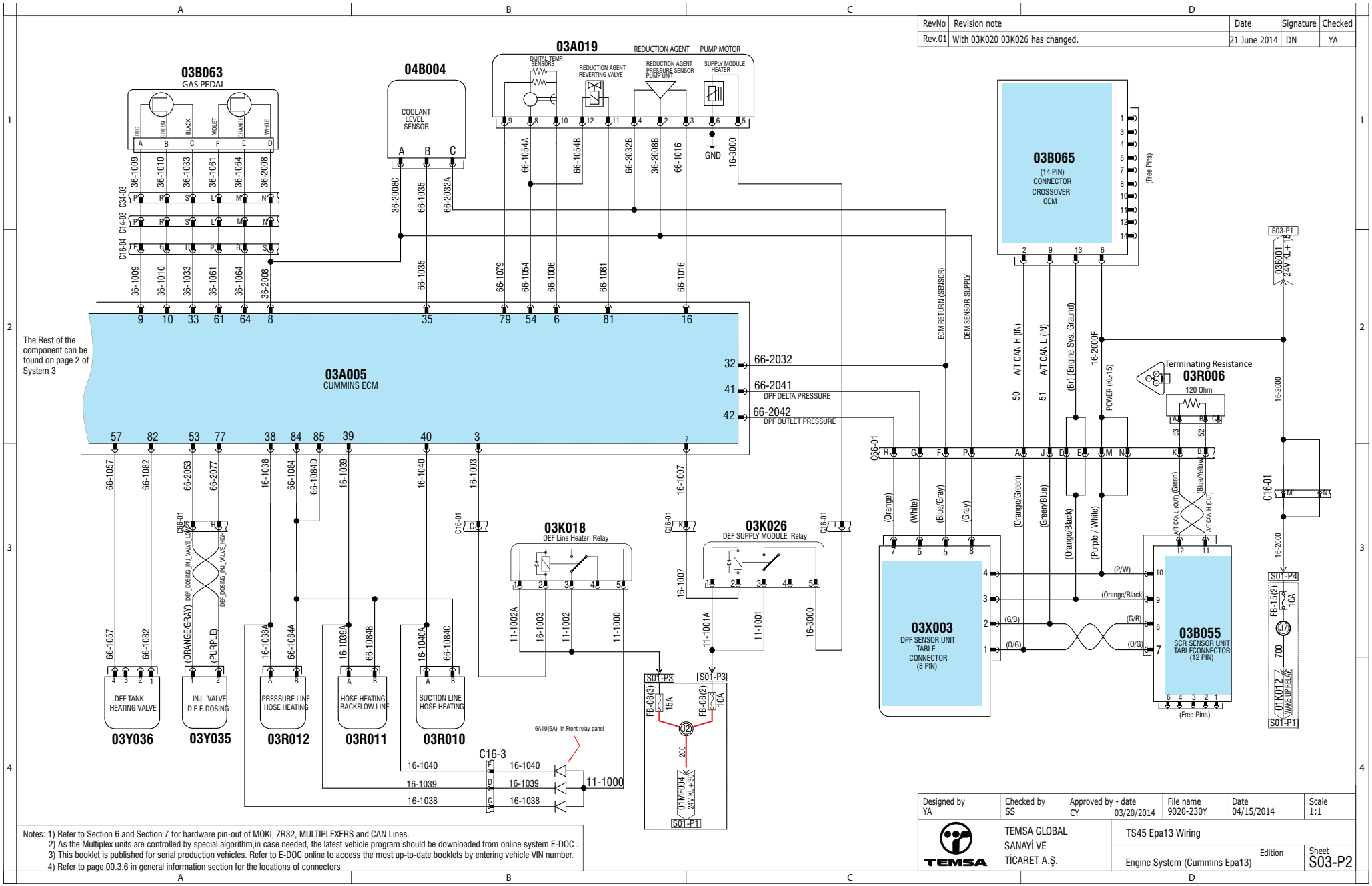
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Engine System (Cummins Epa13) | Edition | Sheet S03-P1

Code	Spanish	Français
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30
03A005	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)
03A019	Unidad de potencia de dosificación de Adblue	Unité d'alimentation du dosage Adblue
03B001	Sensor de Nivel del Depósito DEF/de Temperatura	Capteur Niveau De Remplissage/Température Réservoir DEF
03B055	Sensor de Óxidos de Nitrógeno del Catalizador Scr	Capteur Oxydes D'Azote Du Convertisseur Catalytique Scr
03B063	Actuador del Pedal del Acelerador (COMESYS)	Transmetteur De Pédale D'Accélérateur (COMESYS)
03B065	Sensor de temperatura, nivel DEF	Niveau DEF, capteur de température
03K018	Relé de calentamiento de línea de fluido de urea	Relais de chauffage de la ligne de fluide de l'urée
03K026	Relé del motor de arranque Cummins	Relais du démarreur Cummins
03R006	Resistencia de la Terminación de la Línea del Cuadro de Mandos del Motor 1	Resistance Terminale 1 Ligne "Can" De Moteur
03R010	Calentador de sistema de dosificado 1 (Línea de presión)	Elément chauffant 1 du système de dosage (ligne de pression)
03R011	Calentador de sistema de dosificado 2 (Línea de presión)	Elément chauffant 2 du système de dosage (ligne de retour)
03R012	Calentador de sistema de dosificado 1 (Línea de succión)	Elément chauffant 1 du système de dosage (ligne d'aspiration)
03X003	Conector del Filtro de Partículas Diesel (DPF)	Connecteur Filtre À Particules Diesel DPF
03Y027	Válvula del regulador de presión Prestij E5	Soupape de régulation de pression Prestij E5
04B004	Sensor de Nivel de Llenado de Depósitos de Refrigerante 1	Capteur Niveau De Rempliss. Réserv. Liq. De Refroidissement 1

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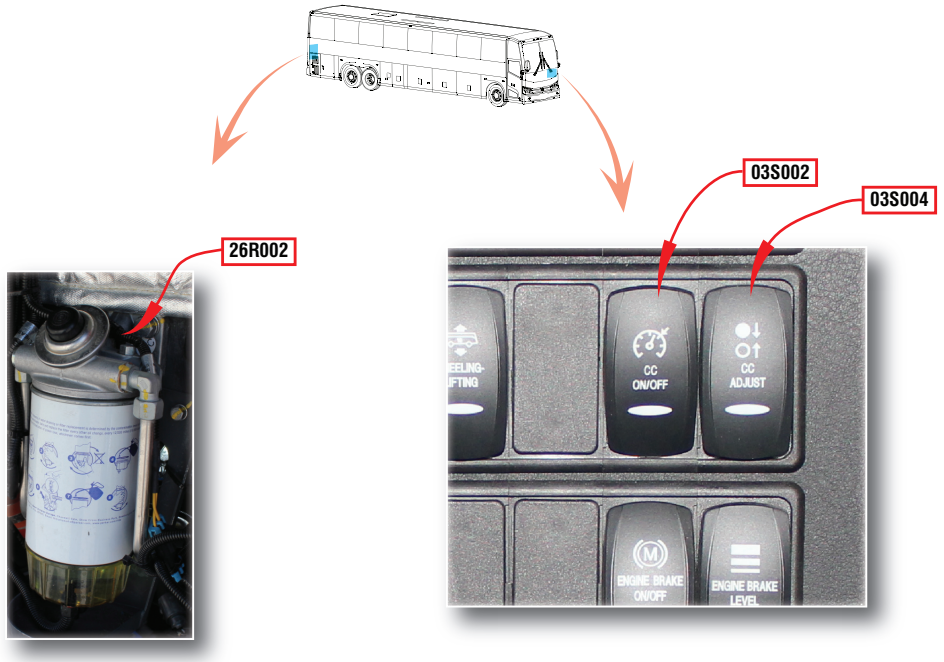
Rev.01 | With 03K020 03K026 has changed. | 21 June 2014 | DN | YA
03B063
GAS PEDAL
04B004
COOLANT LEVEL SENSOR
03A019
REDUCTION AGENT
PUMP MOTOR
DIJITAL TEMP. SENSORS
REDUCTION AGENT REVERTING VALVE
REDUCTION AGENT PRESSURE SENSOR PUMP UNIT
SUPPLY MODULE HEATER
GND
03B065
(14 PIN) CONNECTOR CROSSOVER OEM
(Free Pins)
The Rest of the component can be found on page 2 of System 3
03A005
CUMMINS ECM
66-2032
66-2041
DPF DELTA PRESSURE
66-2042
DPF OUTLET PRESSURE
ECM RETURN (SENSOR)
OEM SENSOR SUPPLY
A/T CAN H (IN)
A/T CAN L (IN)
(Br) (Engine Sys. Graund)
POWER (KL-15)
16-2000F
Terminating Resistance
03R006
120 Ohm
03K018
DEF Line Heater Relay
03K026
DEF SUPPLY MODULE Relay
03X003
DPF SENSOR UNIT TABLE CONNECTOR (8 PIN)
03B055
SCR SENSOR UNIT TABLECONNECTOR (12 PIN)
(Free Pins)
03B001
24V KL+ (P1)
16-2000
C16-01
S01-P4
S01-P1
FB-15(2)
10A
J17
700
01K012
WIRE OF RELAY
DEF TANK HEATING VALVE
03Y036
INJ. VALVE D.E.F. DOSING
03Y035
PRESSURE LINE HOSE HEATING
03R012
HOSE HEATING BACKFLOW LINE
03R011
SUCTION LINE HOSE HEATING
03R010
C16-3
6A10(6A) in Front relay panel
FB-08(3)
15A
FB-08(2)
10A
J2
200
01MF004
24V KL+ 30
S01-P3
S01-P1
Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors
Designed by YA | Checked by SS | Approved by - date CY 03/20/2014 | File name 9020-230Y | Date 04/15/2014 | Scale 1:1
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
Engine System (Cummins Epa13)
Edition
Sheet S03-P2

Code	Spanish	Français
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
03S002	Interruptor de Control de Crucero Activo	Bouton De Commande Regulateur De Vitesses
03S004	Interruptor de Activación/Reanudación del Control de Crucero	Bouton De Commande Reglage/Reprise Regulateur De Vitesses
07A001	Grupo de Instrumentos	Combiné D'Instruments
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
26R002	Unidad de Resistencias del Precalentador de Combustible (FLEETGUARD CUMMINS 24V)	Resistance De L'Unite De Chauffage Carburant (FLEETGUARD CUMMINS 24V)



RevNo	Revision note	Date	Signature	Checked
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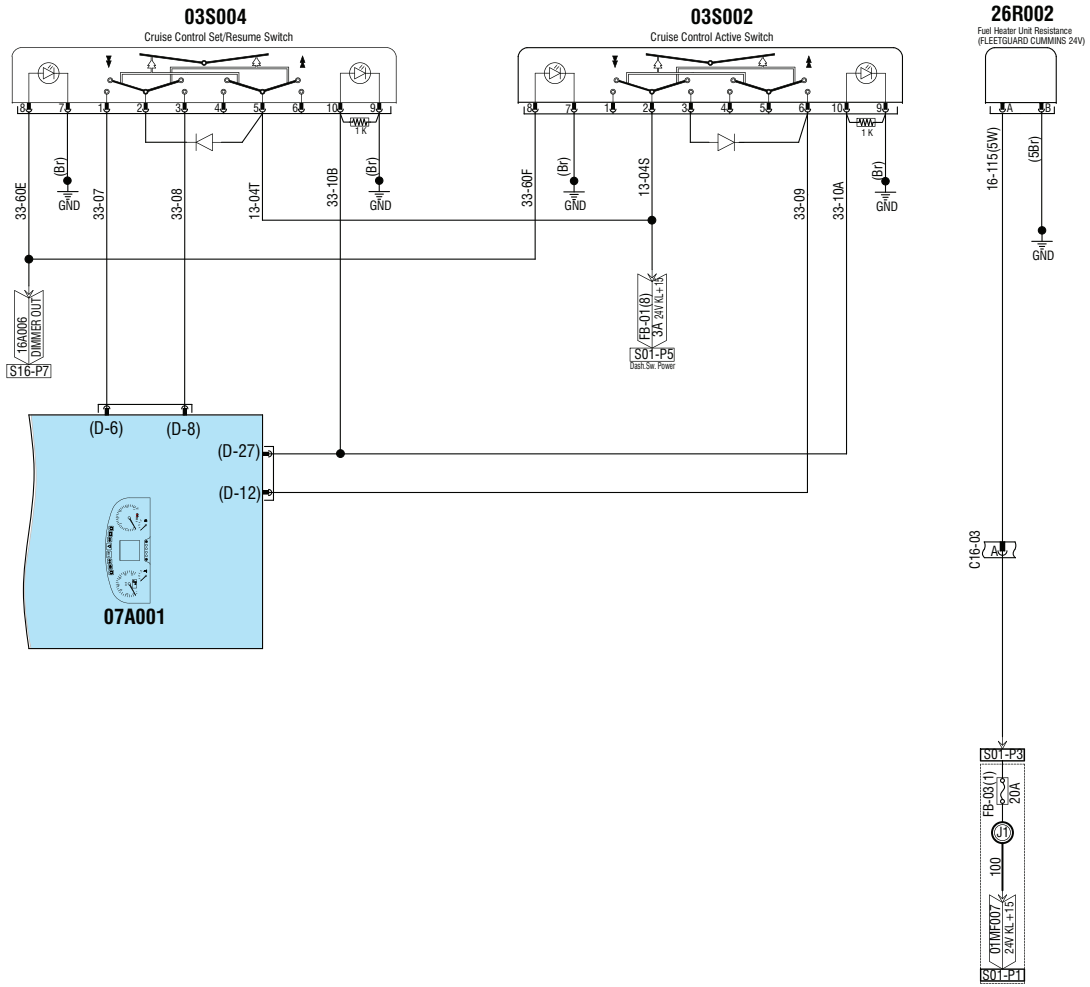

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
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Designed by	Checked by	Approved by - date	File name	Date	Scale
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Engine System (Cummins Epa13) | Edition | Sheet S03-P3

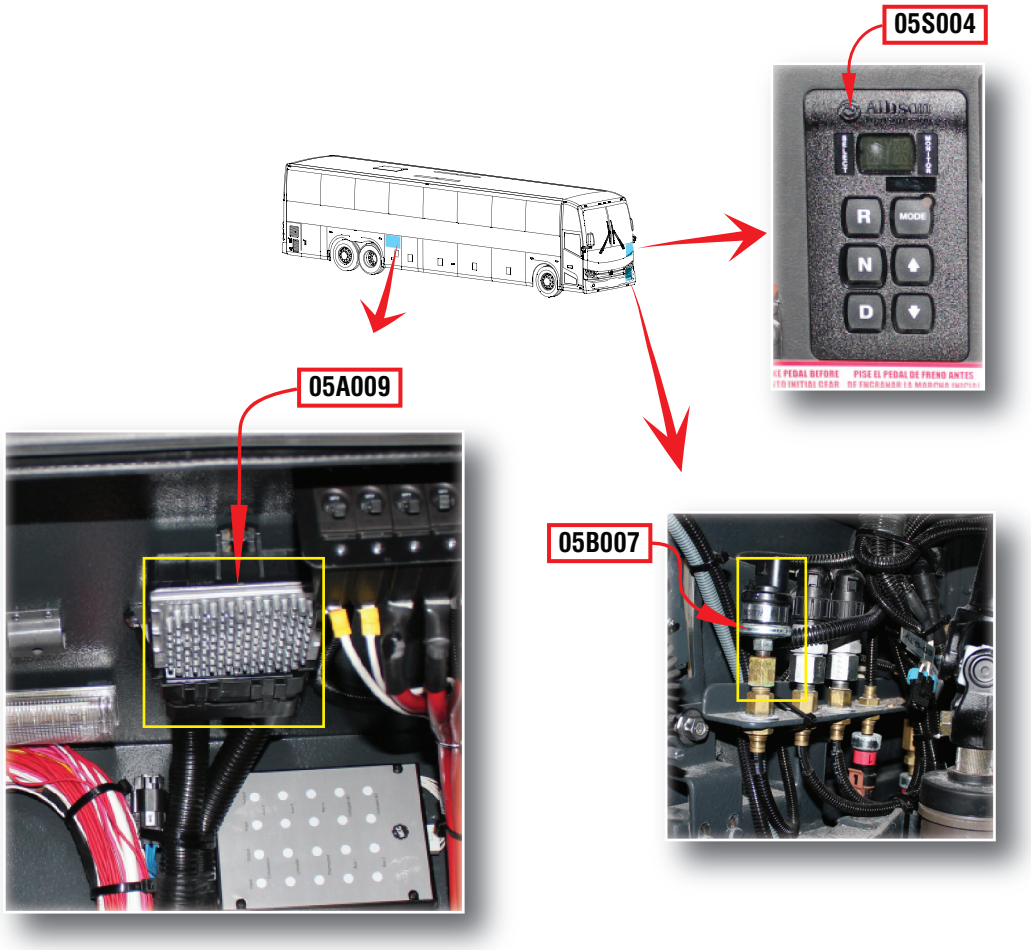
05 TRANSMISSION AND RETARDER SYSTEM

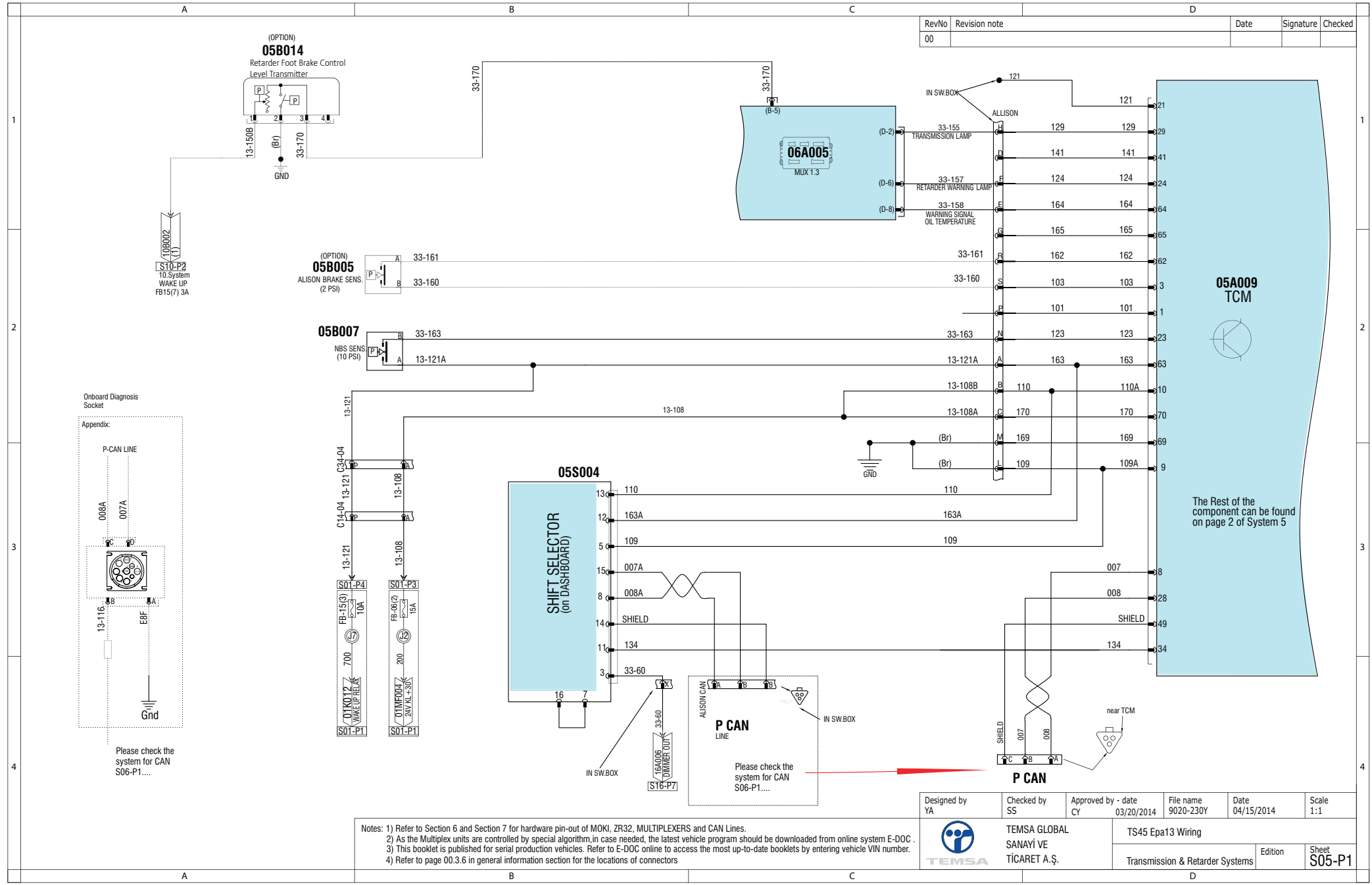
Code List & Locations 58
(S05-P1) Transmission & Retarder Sys. Wiring 1 59

Code List & Locations 60
(S05-P2) Transmission & Retarder Sys. Wiring 2 61

Diagnostic and Fault Codes 62-63-64-65

Code	Spanish	Français
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30
05A009	Unidad de Control de Transmisión Automática Allison	Transmission Automatique Voith
05B005	Sensor de Presión Allison 1	Capteur De Pression Allison 1
05B007	Sensor de Presión Allison 3	Capteur De Pression Allison 3
05B014	Retardador del Transmisor de Nivel del control de Freno 1	Transmetteur niveau 1 du contôle de la pédale de frein du ralentisseur
05S004	Selector de Cambios	Selecteur De Vitesses
06A005	Multiplexor 1,3	Mux 1.3
10B002	Sensor de Presión de Aire 1 (Depósito de Aire) (Freno Delantero)	Manocontacteur Pression De Réserve Correction D'Assiette Nr
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur





RevNo	Revision note	Date	Signature	Checked
00				

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
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4) Refer to page 00.3.6 in general information section for the locations of connectors

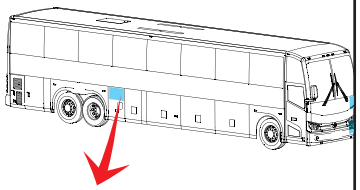
Designed by	Checked by	Approved by - date	File name	Date	Scale
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

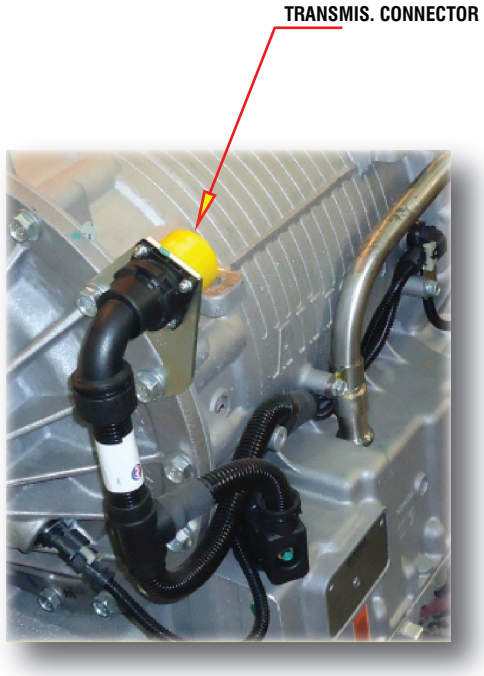
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

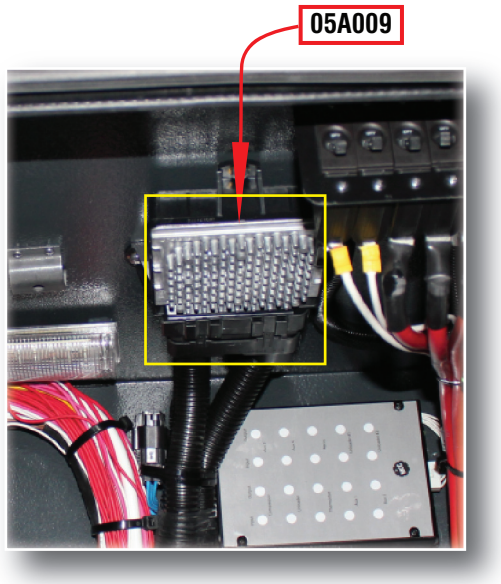
TS45 Epa13 Wiring

Transmission & Retarder Systems | Edition | Sheet S05-P1

Code	Spanish	Français
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
05A009	Unidad de Control de Transmisión Automática Allison	Transmission Automatique Voith
05S010	Palanca del Retardador / Control de Velocidad Crucero	Levier De Ralentisseur-Relais Tempomat
07A001	Grupo de Instrumentos	Combiné D'Instruments







RevNo	Revision note	Date	Signature	Checked
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The Rest of the component can be found on page 1 of System 5

05A009
TCM

19	119	119	1
11	111	111	2
33	133	133	3
51	151	151	4
12	112	112	5
74	174	174	7
15	115	115	8
78	178	178	9
31	131	131	10
36	136	136	12
18	118	118	13
37	137	137	14
35	135	135	15
52	152	152	17
71	171	171	19
55	155	155	20
75	175	175	21
79			25
54	154	154	26
44	144	144	28
40	140	140	29
76	176	176	30
77	177	177	31
16	116	116	32
59	159	159	33
60	160	160	34
80	180	180	35
20	120	120	36
39	139	139	37
			11
61	161	11-58	37
58	158A	158	

IN SW.BOX
ALLISON
K
J
33-164

TRANSMIS. CONNECTOR

C33-01
13-18
C34-01
13-18
C14-01
S01-P3
FB-01(5)
3A
J1
100
01MF007
24V KL.+15
S01-P1

05S010 (OPTION)
Retarder Lever-Cruise Control

RT-1

13-18	33-45	33-46	33-47	33-48	33-49	33-50
	33-45	33-46	33-47	33-48	33-49	33-50
	(C-2)	(C-3)	(C-4)	(C-5)	(C-6)	(C-7)

07A001

Spare wires in Allison wiring harness

16 pin connector around TCM connector

16 pin connector next to connector on transmission

Spare wires around shift selector

SP-08
SP-09

Spare wires beneath drivers console next to driver

SP-01	SP-01	A
SP-02	SP-02	B
SP-03	SP-03	C
SP-04	SP-04	D
SP-05	SP-05	E
SP-06		F
SP-07		G
SP-08		H
SP-09		J
SP-10	SP-10	F
SP-11	SP-11	G
121	121	21

05A009
TCM

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

Designed by	Checked by	Approved by - date	File name	Date	Scale
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Transmission & Retarder Systems | Edition | Sheet S05-P2

Diagnostic and Fault Codes

1- Diagnostic :

To display diagnostic codes using the display of a pushbutton sh ift 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 simultaneo usly a second time to access the diagnostic code readout. The display for each code r epeats 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 ind icator 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 mainta ined 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 U PSHIFT and DOWNSHIFT arrows or press any range button, D, N, or R. If the shift is not inhib ited 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 wi ll automatically return to the normal operating mode.
3. Turn off the vehicle engine with the ignition switch, which turns off power to the TCM.

1- 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

1- 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

- 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 Incompatability with Gear Shift Control Module 1
U0333	Software Incompatability with Gear Shift Control Module 2
U0404	Gear Shift Module 1 Invalid Data
U0592	Gear Shift Module 2 Invalid Data

06 MULTIPLEX SYSTEM

Code List & Locations 68
(S01-P1) CAN Interface connectivity 69

ZR32 Pin Decription Lists 70
(S06-P2) ZR32 Power Wiring 71

MUX1.1 Pin Decription Lists 72
(S06-P3) MUX1.1 Power Wiring 73

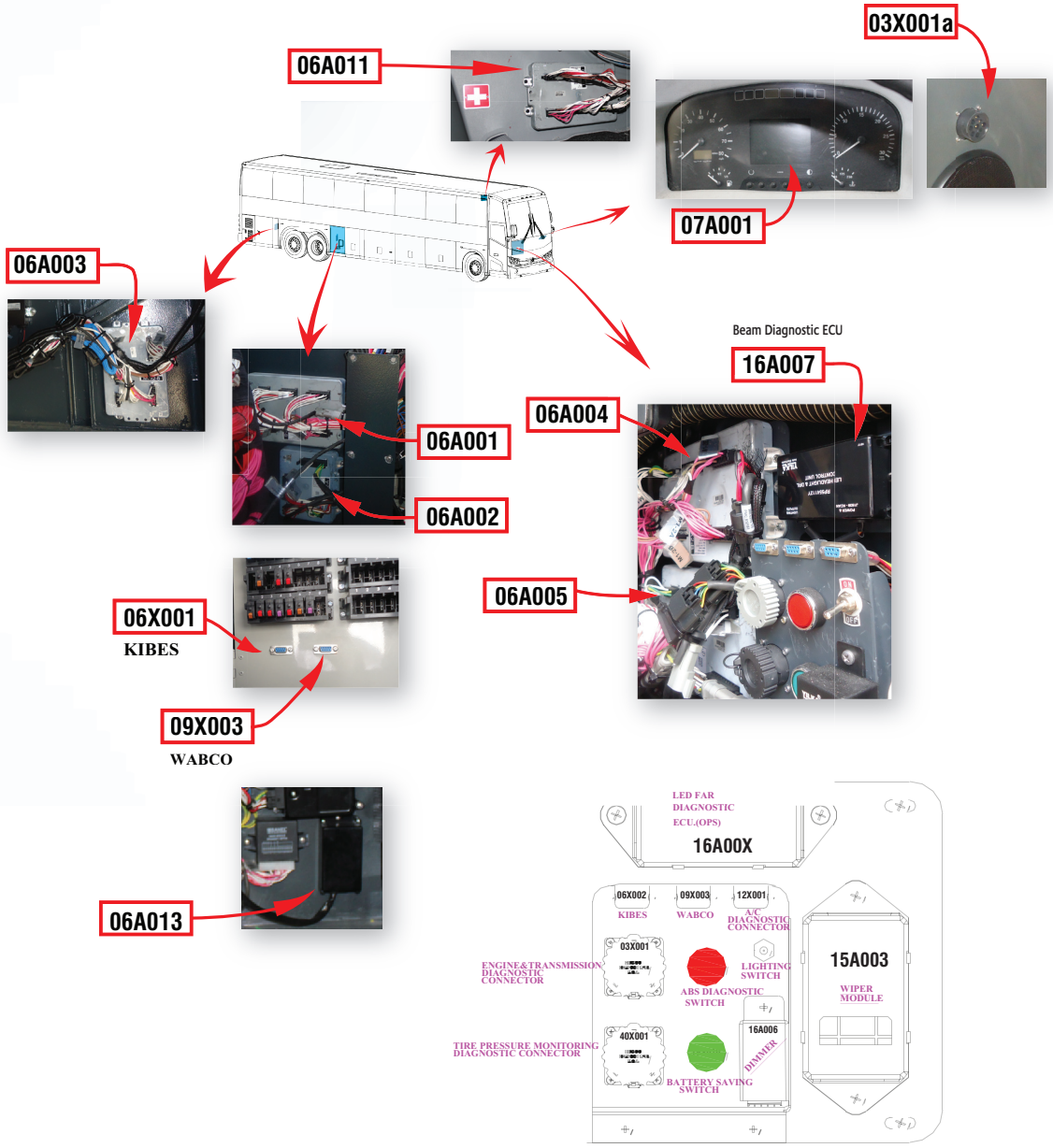
MUX1.2 Pin Decription Lists 74
(S06-P4) MUX1.2 Power Wiring 75

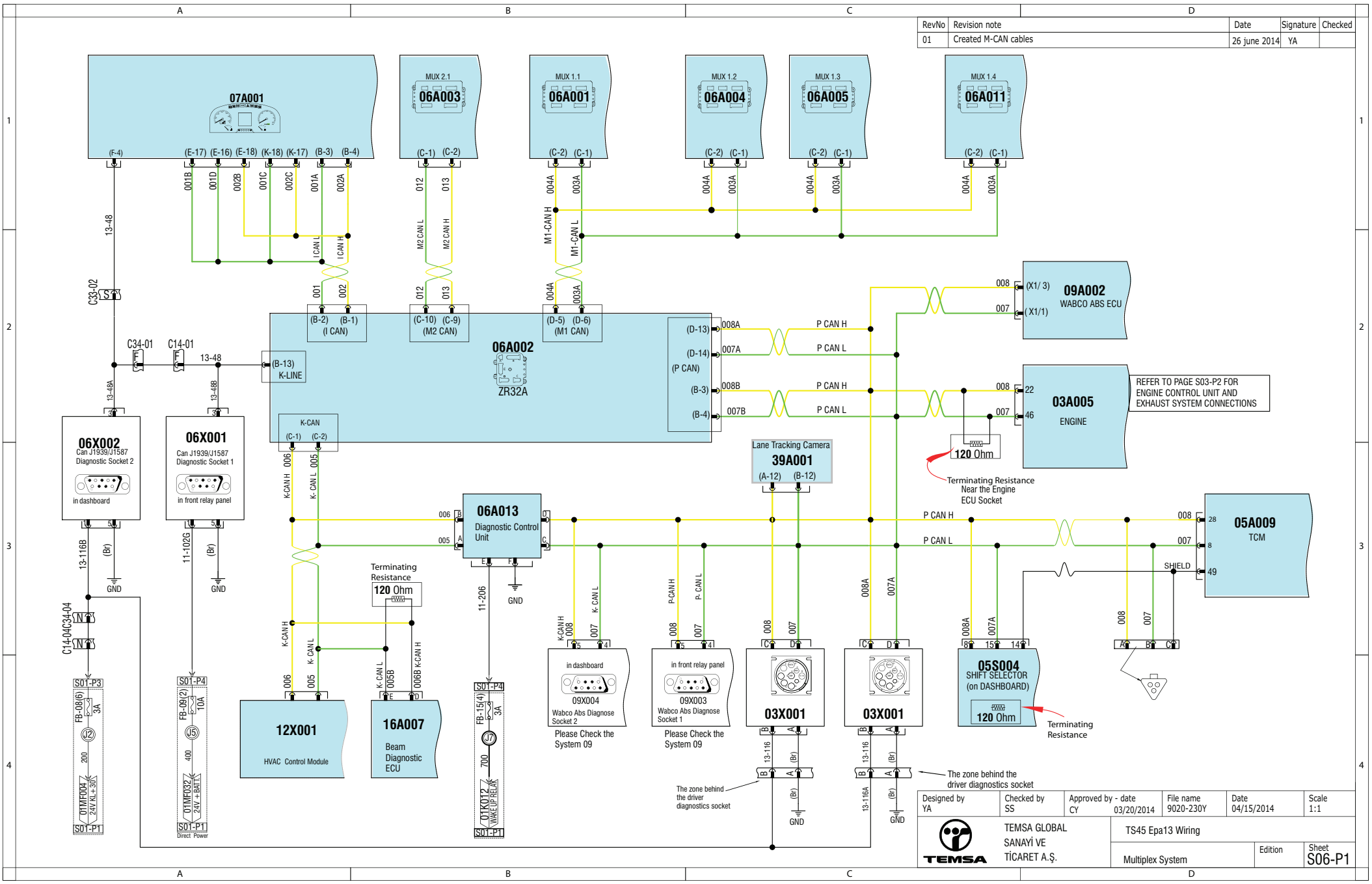
MUX1.3 Pin Decription Lists 76
(S06-P5) MUX1.3 Power Wiring 77

MUX1.4 Pin Decription Lists 78
(S06-P6) MUX1.4 Power Wiring 79

MUX2.1 Pin Decription Lists 80
(S06-P6) MUX2.1 Power Wiring 81

Code	Spanish	Français
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)
01MF004	Alimentación del Panel de Relés Kl30	Alimentation Du Panneau Des Relais Kl30
01MF032	Alimentación (suministrada directamente de la batería para información de memoria) de 24V KL-30	24V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
03A005	Unidad de Control Electrónico del Motor (Unidad de Control de Motores Diesel)	Unite De Commande Electronique Du Moteur (Module De Commande De Moteur Cummins)
03X001	Toma de Conexión de Herramientas de Diagnóstico de a Bordo	Prise De Diagnostic De Bord
03X001	Toma de Conexión de Herramientas de Diagnóstico de a Bordo	Prise De Diagnostic De Bord
05A009	Unidad de Control de Transmisión Automática Allison	Transmission Automatique Voith
05S004	Selector de Cambios	Selecteur De Vitesses
06A001	Multiplexor 1.1	Mux 1.1
06A002	Zr32-E	Zr32-E
06A003	Multiplexor 2,1	Mux 2.1
06A004	Multiplexor 1,2	Mux 1.2
06A005	Multiplexor 1,3	Mux 1.3
06A011	Multiplexor 1,4	Mux 1.4
06A013	Unidad de control de diagnóstico	Unidad de control de diagnóstico
06X001	Toma de Conexión para Herramientas de Diagnóstico del Cuadro de Mandos J1939/J1587	Prise Diagnostic Can J1939/J1587
06X002	Toma de Conexión para Herramientas de Diagnóstico del Cuadro de Mandos J1939/J1587	Prise Diagnostic Can J1939/J1587
07A001	Grupo de Instrumentos	Combiné D'Instruments
09A002	Módulo de Control Electrónico de ABS (WABCO)	Calculateur Système Antiblocage Abs
09X003	Toma de Conexión para Diagnóstico del ABS Wabco	Culot De Diagnostic Abs Wabco
09X004	Toma de Conexión para Diagnóstico del ABS Wabco	Culot De Diagnostic Abs Wabco 2
16A007		




RevNo | Revision note | Date | Signature | Checked
01 | Created M-CAN cables | 26 june 2014 | YA
07A001
MUX 2.1
06A003
MUX 1.1
06A001
MUX 1.2
06A004
MUX 1.3
06A005
MUX 1.4
06A011
06A002
ZR32A
09A002
WABCO ABS ECU
03A005
ENGINE
REFER TO PAGE S03-P2 FOR ENGINE CONTROL UNIT AND EXHAUST SYSTEM CONNECTIONS
05A009
TCM
06X002
Can J1939/J1587 Diagnostic Socket 2
in dashboard
06X001
Can J1939/J1587 Diagnostic Socket 1
in front relay panel
06A013
Diagnostic Control Unit
39A001
Lane Tracking Camera
12X001
HVAC Control Module
16A007
Beam Diagnostic ECU
09X004
Wabco Abs Diagnose Socket 2
09X003
Wabco Abs Diagnose Socket 1
03X001
05S004
SHIFT SELECTOR (on DASHBOARD)
I CAN
M2 CAN
M1-CAN
K-CAN
P CAN H
P CAN L
K-LINE
120 Ohm
Terminating Resistance
Near the Engine ECU Socket
Terminating Resistance
Please Check the System 09
The zone behind the driver diagnostics socket
GND
SHIELD
Designed by YA | Checked by SS | Approved by - date CY 03/20/2014 | File name 9020-230Y | Date 04/15/2014 | Scale 1:1
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
Multiplex System | Edition | Sheet S06-P1

SOCKET B (22 PINS)							
	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	
	I CAN-H	002	1	2	001	I CAN-L	
	P CAN-H	008B	3	4	007B	P CAN-L	
			5	6			
			7	8			
			9	10			
			11	12	11-53		
	K-Line	13-48A	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	
	Graund	Br	01	02	.	11-20 Out Diode 12V 1W	
	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			
	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			
	Emergency Stop Relay	11-35	11	12			
		11-09	13	14			
		11-08	15	16			
		11-07	17	18			

RevNo	Revision note	Date	Signature	Checked
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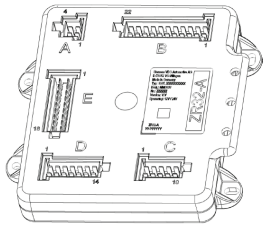

ZR32

SOCKET A

SOCKET E

SOCKET B

PCAN H 008B

007B PCAN L

SOCKET C

11-06

11-06

11-05

11-05

SOCKET D

12V 1W

(Br)

11-20

11-101

11-101

GND

S01-P4

FB-09(1)

15A

J5

400

01MF032

24V + BAT1

S01-P1

Direct Power

11-04

11-04

Go to S06-P1

008A

P CAN H

007A

PCAN L

Go to S06-P1

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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Designed by	Checked by	Approved by - date	File name	Date	Scale
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

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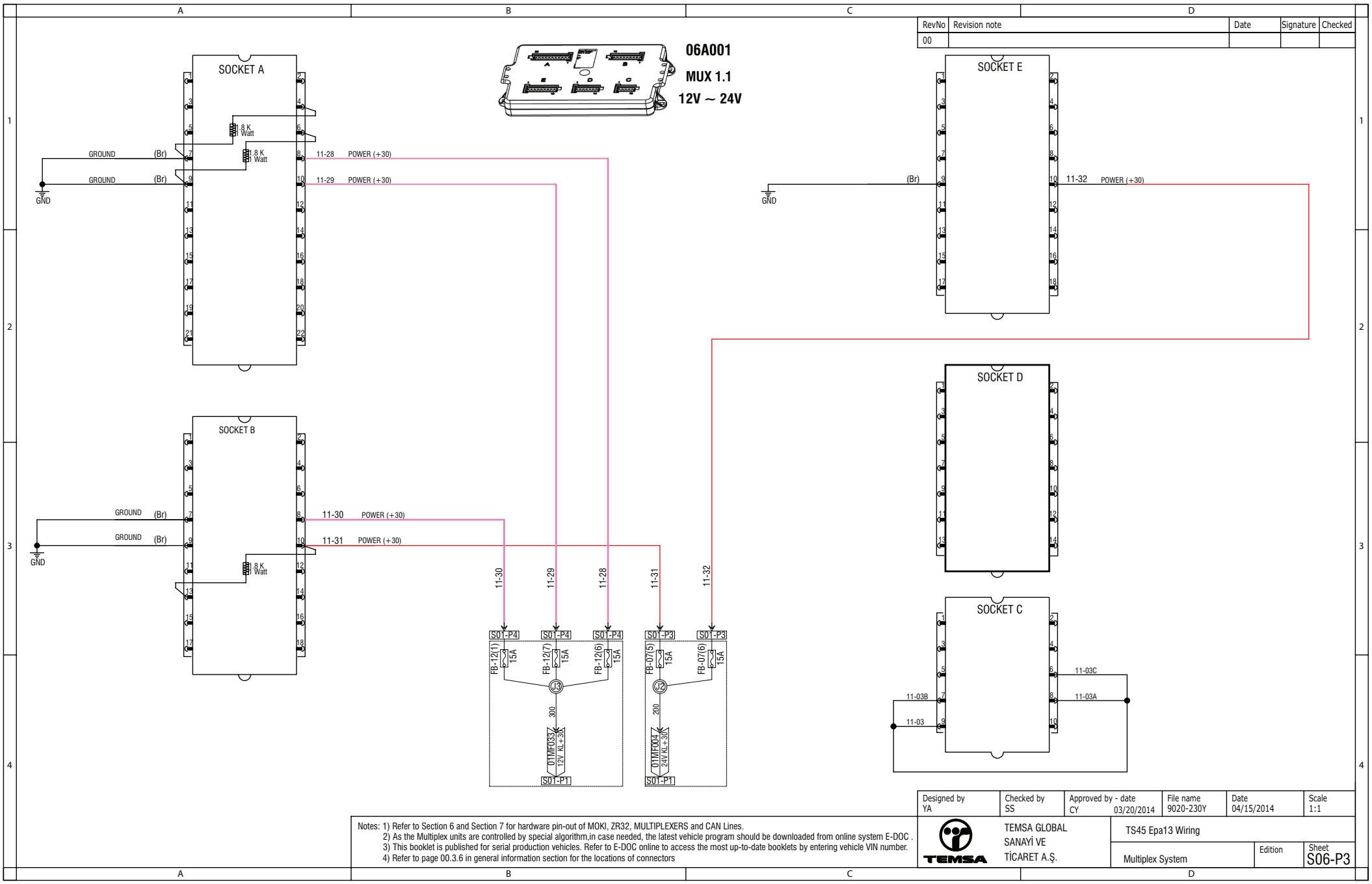
TS45 Epa13 Wiring

Multiplex System

Edition

Sheet S06-P2

SOCKET A (22 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			1	2	14-105	RELAY PANEL LUGGAGE LAMP	AB_Relay_Panel_Lighting_Power
			3	4	14-103	FRONT RIGHT REAR GEAR LAMP	AB_Lamp_Reverse_Gear_Front_Right
EB_Right_3_Luggage_Open_Signal	LUGAGE LID OPEN	14-300	5	6	14-104	FRONT LEFT REAR GEAR LAMP	AB_Lamp_Reverse_Gear_Front_Left
	GROUND	E4A	7	8	11-28	POWER (+30)	
	GROUND	E4B	9	10	11-29	POWER (+30)	
EB_Switch_Relay_Panel_Lighting	RELAY PANEL	14-28	11	12	14-106	LUGGAGE PARK LAMP	AB_Marker_Lamp_Center_Bottom_Left-Right
			13	14			
			15	16	11-36	AISLE LAMP	AB_Lamp_Aisle_Power
EB_Right_2_Luggage_Open_Signal	LUGAGE LID OPEN	14-301	17	18			
EB_Left_2_Luggage_Open_Signal	LUGAGE LID OPEN	14-302	19	20			
EB_Left_3_Luggage_Open_Signal	LUGAGE LID OPEN	14-303	21	22			
SOCKET B (18 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			01	02			
			03	04			AB_Lamp_Door_Area_Lighting
			05	06	11-37	STEP LAMP	AB_Lamp_Step_Power
	GROUND	E4C	07	08	11-30	POWER (+30)	
	GROUND	E4D	09	10	11-31	POWER (+30)	
Free	ASR LAMP	11-27	11	12			
			13	14	16-500	ENGINE START SIGNAL	AB_Engine_Start_Command
EB_Sensor_Fire_Relay_Panel	RELAY PANEL FIRE SIGNAL	11-33	15	16			
EB_Preheater_Active	PREHATER ON SIGNAL	27-07	17	18			
SOCKET C (10 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
	M1 CAN-L	003A	01	02	004A	M1 CAN-H	
			03	04			
			05	06	11-03C	" 0 "	
		11-03B	07	08	11-03A	" 0 "	
		11-03	09	10			
SOCKET D (14 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EB_Left_1_Luggage_Open_Signal	LUGAGE LID OPEN	14-304	01	02	14-305	LUGAGE LID OPEN	EB_Right_1_Luggage_Open_Signal
	PREHATER ON SIGNAL	803	03	04	27-07	PREHATER ACTIVE LAMP	EB_Preheater_Active/Error_Signal
EB_Right_4 _Luggage_Open _Signal(Next_to_Relay_	LUGAGE LID OPEN	14-306	05	06	14-307	LUGAGE LID OPEN	EB_Left_4_Luggage_Open_Signal(A/C Condenser)
EB_Sensor_Fire_Fuel_Tank	FUEL FIRE SENSOR	14-84	07	08	17-2209	FLOOR HEATER IN	
EB_Sensor_Fire_Luggage_Compartment	LUGGAGE FIRE SENSOR	14-78	09	10	17-2210	BOOST PUMP IN	
			11	12			
EC_Sensor_Fuel_Tank_Level	FUEL TANK SENSOR	14-80	13	14			
SOCKET E (18 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
AB_Convector_Valve_Control	FLOOR VALVE OUT	11-170	01	02	11-61	WAKE UP ON RELAY	AB_Wake_Up_Relay_Power
			03	04	14-37	KNEELING VALVE	AB_Valve_Front_Kneeling
			05	06			
AB_110V_Inverter_Enable	INVERTER ENABLE	11-56	07	08	14-109	TEMP. BUS STOP VALVE	AB_Valve_Temporary_Bus_Stop
	GROUND	E4E	09	10	11-32	POWER (+30)	
AB_Lamp_Stop_by_Retarder&Engine_Brake	STOP LAMP OUT	11-202C	11	12	14-81	LIFTING VALVE	AB_Valve_Lifting
AB_Water_Pump_On	WATER PUMP ON SIGNAL	11-38	13	14			
			15	16	14-32	CENTRAL LOCK VALVE	AB_Valve_Luggage_Central_UnLock
			17	18	11-17	ENGINE STOP SIGNAL	AB_Engine_Stop_Command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06A001
MUX 1.1
12V ~ 24V
SOCKET A
SOCKET B
SOCKET C
SOCKET D
SOCKET E
GROUND
(Br)
GND
1.8 K 1 Watt
11-28 POWER (+30)
11-29 POWER (+30)
11-30 POWER (+30)
11-31 POWER (+30)
11-32 POWER (+30)
11-03B
11-03
11-03C
11-03A
S01-P4
S01-P3
S01-P1
FB-12(1) 15A
FB-12(7) 15A
FB-12(6) 15A
FB-07(5) 15A
FB-07(6) 15A
J3
J2
300
200
01MF033 12V KL+30
01MF004 24V KL+30
Designed by YA
Checked by SS
Approved by - date CY 03/20/2014
File name 9020-230Y
Date 04/15/2014
Scale 1:1
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
Multiplex System
Edition
Sheet S06-P3
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MUX 1.2

SOCKET A (22 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			1	2	33-153A	FRONT LOW BEAM RIGHT LAMP	AB_Lamp_Beam_Low_Left_Power
			3	4	33-154	FRONT LEFT PARK LAMP	AB_Lamp_Park_Front_Left
			5	6	33-175	RIGHT DRL LAMP	AB_Lamp_Right_DRL
	Ground	E14	7	8	13-132	POWER (+30)	
	Ground	E15	9	10	13-133	POWER (+30)	
			11	12	33-147	FRONT HIGH BEAM	AB_Lamp_High_Beam_Front_Right
			13	14	yok	yok	AB_DRL_POWER_RIGHT
			15	16	33-176	LEFT DRL LAMP	AB_Lamp_Left_DRL
			17	18	33-150	FRONT HIGH BEAM LAMP LEFT	AB_Lamp_High_Beam_Left
			19	20	33-185C	DRL	AB_DRL_POWER_LEFT
			21	22	33-128	KNEELING LAMP	AB_Lamp_Kneeling_Outside
SOCKET B (18 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			01	02	33-148A	FRONT LOW BEAM RIGHT LAMP	AB_Lamp_Beam_Low_Right_Power
			03	04	33-149	FRONT RIGHT PARK LAMP	AB_Lamp_Park_Front_Right
			05	06			
	Ground	E16	07	08	13-134	POWER (+30)	
	Ground	E17	09	10	13-135	POWER (+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
			15	16	35-05	A/V KL-58	AB_Audio/Video_System_Lighting(KL58-Park)
			17	18	35-04	A/V KL-15	AB_Audio/Video_System_Power(KL15)
SOCKET C (10 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
	MCAN LOW (GREEN)	003	01	02	004	MCAN HIGH (YELLOW)	
			03	04			
			05	06	33-126		
	" 0 "	33-127	07	08	33-127A		
	" 0 "	33-127	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 WARNING LAMP	EB_ABS_Warning_Lamp_Signal
	BRAKE PEDAL 2 INPUT	33-133	03	04	33-145	PARK BRAKE RELEASE	EB_Emergency_Park_Brake_Released
	UNDER DRIVER LAMP SW ON SIGNAL	34-06	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			
			03	04	33-102	LUGGAGE LAMP	AB_Lamp_MUX1.2-MUX1.3_Lighting
			05	06	33-110	SIDE DOOR LAMP	AB_Lamp_Door_Area_Lighting
			07	08			
	Ground	E18	09	10	13-136	POWER (+30)	
			11	12			
			13	14			
			15	16			
			17	18			

RevNo	Revision note	Date	Signature	Checked
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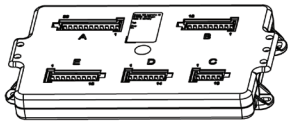

06A004

MUX 1.2

12V

SOCKET A

SOCKET B

SOCKET C

SOCKET D

SOCKET E

GROUND E14

GROUND E15

GND

8 K 1 Watt

13-132 POWER (+30)

13-133 POWER (+30)

GROUND E16

GROUND E17

13-134 POWER (+30)

13-135 POWER (+30)

GROUND (Br)

13-136 POWER (+30)

C34-02

C14-02

S01-P4

FB-11(5) 15A

FB-11(4) 15A

FB-11(3) 15A

FB-11(2) 15A

FB-11(6) 15A

J3

300

01MF033

12V KL+30

S01-P1

33-126

33-127A

33-127B

33-127

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Designed by	Checked by	Approved by - date	File name	Date	Scale
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

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TS45 Epa13 Wiring

Multiplex System

Edition

Sheet S06-P4

SOCKET A (22 PINS)

SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EB_Tire_Pressure_Low_Signal	TIRE PRESSURE LG	33-181	1	2			
EB_Switch_Driver_Seat_Belt	SEAT BELT WARNING	33-182	3	4	77-1307	A/C DRIVER ON INPUT	AB_Driver_A/C_Valve_Control_Pwr
			5	6	33-143	D+ SIGANAL	AB_D+_Signal
	Ground	E2	7	8	13-101	POWER (+30)	
	Ground	E3	9	10	13-102	POWER (+30)	
EB_Alcohol_Interlock_Start_Enable_Signal	ALCOLOCK ON (Spare Cable)	33-184	11	12			
			13	14			
			15	16	33-144	KL-58 FOR A/C	AB_Park_Light(KL-58))_for_A/C_Unit
			17	18	33-141	WIPER MOTOR INTERVAL SW.	AB_Wiper_Interval_Stage_Power_Control
			19	20	33-118	MIRROR	AB_Heater_Mirror_Power
			21	22	33-109	PARK OUT	AB_Lamp_Park_Dimmer_Power

SOCKET B (18 PINS)

SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EC_Sensor_Brake_Lining_Front_Left	FRONT LEFT LINING SENSOR	34-01	01	02			
EC_Sensor_Brake_Lining_Front_Right	FRONT RIGHT LINING SENSOR	34-02	03	04	33-69	REAR VITEC SIGNAL	AB_Rear_View_Monitor_Reverse_Signal
EC_Sensor_Retarder_Foot_Control	FOOT RETARDER SENSOR	33-170	05	06	33-142	DOOR CLOSING SIGNAL	AB_Defroster_Low_Fan_Request
	Ground	E4	07	08	13-103	POWER (+30)	
	Ground	E5	09	10	13-104	POWER (+30)	
			11	12	33-177	AIR HORN	AB_Air_Horn_Power
			13	14	33-183	LDWS POWER	AB_Lane_Departure_Pwr(LDW)
			15	16	33-129	RIGHT HORN	AB_Horn_Right_Power
			17	18	33-130	LEFT HORN	AB_Horn_Left_Power

SOCKET C (10 PINS)

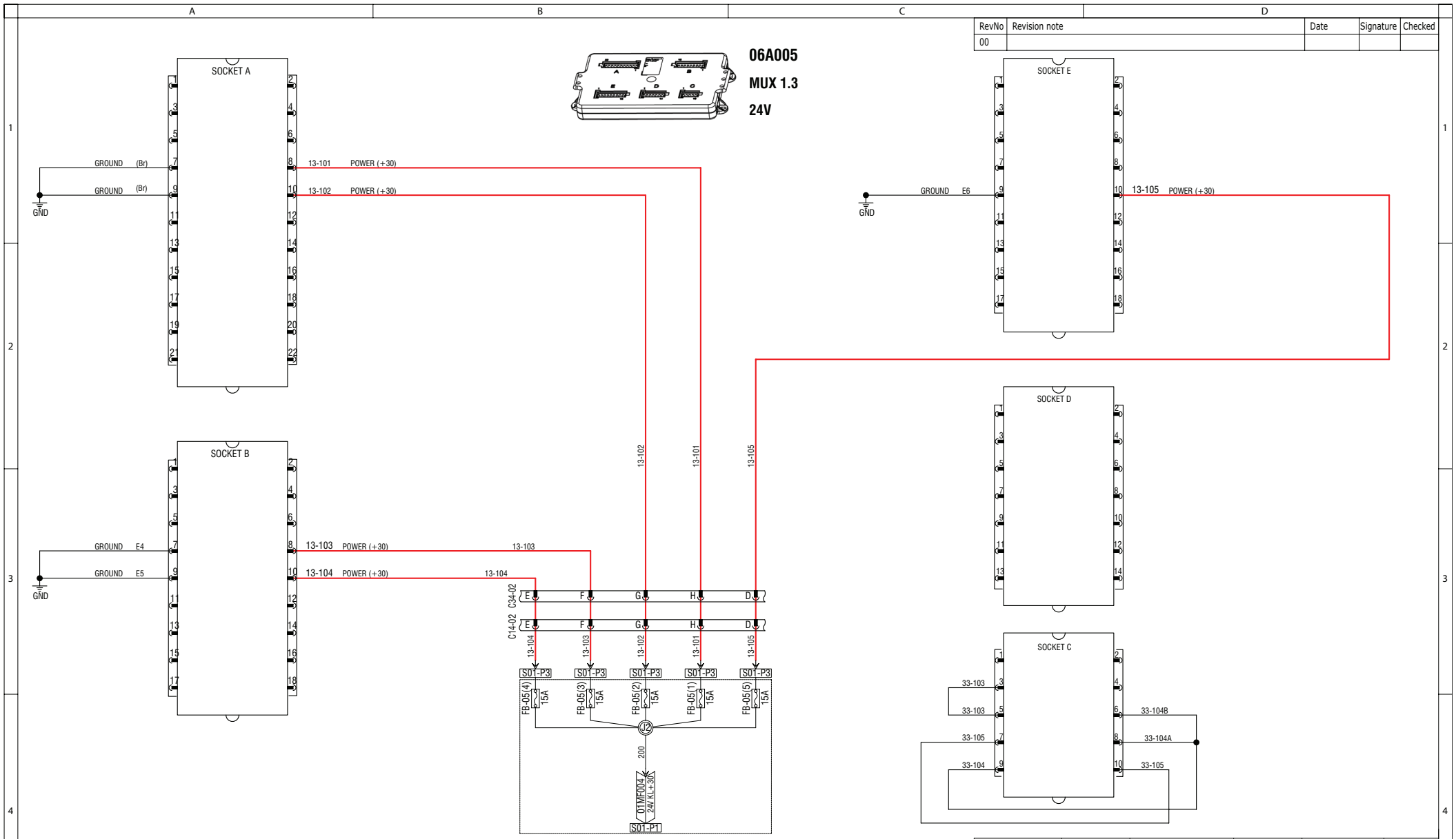
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
	MCAN LOW (GREEN)	003	01	02	004	MCAN HIGH (YELLOW)	
			03	04			
			05	06	33-104B	" 0 "	
	" 1 "	33-105	07	08	33-104A	" 0 "	
	" 0 "	33-104	09	10	33-105	" 1 "	

SOCKET D (14 PINS)

SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EB_Switch_MUX1.2-MUX1.3_Lighting	LUGGAGE SW.	33-101	01	02	33-155	TRANSMISSION LAMP	
EB_Allison_Check_Trans_Warning	WATER PUMP SIGNAL	33-172	03	04	33-173	SIGNAL	
EB_Park_Brake_Switch	PARKING BRAKE SW.	33-119	05	06	33-157	RETARDER WARNING LAMP	
EB_Sensor(Air)_Rear_Brake_Applied	STOP LAMP SENS. 2	33-123	07	08	33-158	OIL TEMPERATURE WARNING SIGNAL	EB_Allison_Oil_Temp_Warning
EB_Sensor(Air)_Front_Brake_Applied	STOP LAMP SENS. 1	33-124	09	10			
EB_Wiper_31b_Signal(Zero-Position)	WIPER 31b	33-136B	11	12			
EC_Sensor_Air_Pressure_Rear_Brake_Tank	BRAKE TANK SENSOR 2	33-121	13	14	33-122	BRAKE TANK SENSOR 1	EC_Sensor_Air_Pressure_Front_Brake_Tank

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	33-171	A/C ON	AB_Driver_A/C_for_Defroster
			03	04	33-120	STEERING CONTROL	AB_Valve_Steering_Column_Power
			05	06	33-107	DIMMER LEVEL SW. UP	AB_Dimmer_Up_Signal
			07	08	33-108	DIMMER LEVEL SW. UP	AB_Dimmer_Down_Signal
	Ground	E6	09	10	13-105	13-105	
			11	12	33-174	PREHATER ON	yok
			13	14	33-138	WASHER SW.	AB_Wiper_Washer_Motor_Power_Control
			15	16	33-139	WIPER MOTOR FAST SW.	AB_Wiper_High_Stage_Power_Control
			17	18	33-140	WIPER MOTOR SLOW SW.	AB_Wiper_Low_Stage_Power_Control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06A005
MUX 1.3
24V
SOCKET A
SOCKET B
SOCKET C
SOCKET D
SOCKET E
GROUND (Br)
GROUND (Br)
GND
13-101 POWER (+30)
13-102 POWER (+30)
GROUND E4
GROUND E5
13-103 POWER (+30)
13-104 POWER (+30)
GROUND E6
13-105 POWER (+30)
C34-02
C14-02
S01-P3
FB-05(4) 15A
FB-05(3) 15A
FB-05(2) 15A
FB-05(1) 15A
FB-05(5) 15A
J2
200
01MF004
24V KL+30
S01-P1
33-103
33-104B
33-104A
33-105
33-104
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Designed by YA
Checked by SS
Approved by - date CY 03/20/2014
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Scale 1:1
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
Multiplex System
Edition
Sheet S06-P5

SOCKET A (22 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			1	2	55-10	INTERIOR LIGHT (WHITE)	AB_Interior_Lighting_Position_1
			3	4	45-213	yok	AB_Handicapped_Lift_Enable_Signal
			5	6			
	Ground	E10B	7	8	15-01	POWER (+30) 24V	
	Ground	E10A	9	10	15-02	15-02	
			11	12			
			13	14	45-201A	LIFT DOOR UNLOCK	AB_Handicapped_Lift_Unlock_Power_Signal
			15	16	45-202A	LIFT DOOR LOCK	AB_Handicapped_Lift_Lock_Power_Signal
			17	18			
EB_Hand_Lift_Compartm._Lower_Door_Closed_Sign.			19	20	55-12	DOOR VALVE	AB_Valve_Front_Door_Control
EB_LUGGAGE_OPEN_SOL(3)_ARKA	LUGGAGE LID OPEN	14-303	21	22	55-11	WC OCCUPIED LAMP	AB_WC_Occupied_Lamp

SOCKET B (18 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			01	02	55-13	INTERIOR LIGHT (YELLOW)	AB_WC_Occupied_Lamp
			03	04	55-14	DRIVER LIGHTING	AB_Lamp_Driver_Lighting
			05	06	55-15	SEAT BELT	AB_Passenger_Seat_Belt_Warning
	Ground		07	08	15-14	POWER (+30) 24V	
	Ground		09	10	15-15	POWER (+30) 24V	
			11	12			
			13	14	55-16	AUXILARY LAMP	AB_Lamp_Power_Auxiliary(Night_Interior)
			15	16	55-17	READING LAMP %100 (GREEN)	BS_04_09\Configuration\ZR32-A
			17	18	55-18	READING LAMP(%50) (BLUE)	

SOCKET C (10 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
	M1-CAN L	003	01	02	004	M1-CAN H	
	" 0 "	55-23	03	04			
	" 0 "	55-23	05	06	55-25	" 2 "	
	" 2 "	55-25 &55-25A	07	08	55-24	" 1 "	
	" 1 "	55-24	09	10	55-25A	" 2 "	

SOCKET D (14 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EB_Button_Handicapped_Passanger_Stop_Request		45-211	01	02	45-212		EB_Switch_Handicapped_Lift_Upper_Door_Open
			03	04			
EB_Switch_Door_Front_Closing	DOOR PRESSURE SWITCH	55-19	05	06	55-20	DOOR PRESSURE SWITCH	EB_Switch_Front_Door_Pressure
EB_Sensor_Door_Front_Open	MICRO SWITCH	55-21	07	08	55-22	SAFETY MICRO SWITCH	EB_Sensor_Door_Front_Safety
			09	10			
EB_Handicapped_Lift_Upper_Door_Unlocked_Signal	LIFT DOOR UNLOCK	45-203	11	12	45-204	LIFT DOOR LOCK	EB_Handicapped_Lift_Upper_Door_Locked_Signal
			13	14			

SOCKET E (18 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
AB_Handicapped_Lift_Yellow_Lamp_Ground_Signal		45-207	01	02	55-26	FRONT TOP MARKER LAMP	AB_Front_Top_Marker_Lamp_Power
			03	04	55-27	REAR TOP MARKER LAMP	AB_Rear_Top_Marker_Lamp_Power
			05	06	55-28	LEFT SIDE MARKER LAMP	AB_Top_Left_Side_Marker_Lamp_Power
			07	08	55-29	RIGHT SIDE MARKER LAMP	AB_Top_Right_Side_Marker_Lamp_Power
	Ground	E9A	09	10	15-13	POWER (+30) 12V	
			11	12	45-208	Handicapped Lift Warning Lamp	AB_Handicapped_Lift_Lamps_Power_Signal
			13	14			
AB_Handicapped_Lift_Unlock_Ground_Signal	LIFT DOOR UNLOCK	45-202B	15	16			
AB_Handicapped_Lift_Lock_Ground_Signal	LIFT DOOR LOCK	45-201B	17	18			

RevNo	Revision note	Date	Signature	Checked
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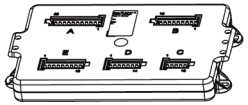

06A011
MUX 1-4
12V ~ 24V

SOCKET A

SOCKET B

SOCKET C

SOCKET D

SOCKET E

(Br) — GND — E8B

15-01 POWER (+30) 24V

15-02 POWER (+30) 24V

15-13 POWER (+30) 12V

15-14 POWER (+30) 24V

15-15 POWER (+30) 24V

C35-02

C34-05

C14-05

S01-P3

S01-P4

FB-06(7) 15A

FB-06(8) 15A

FB-06(6) 15A

FB-06(5) 15A

FB-12(8) 15A

J2

J3

200

300

01MF004 24V KL+30

01MF033 12V KL+30

S01-P1

66-67

66-68A

66-68

66-68C

66-68B

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

Designed by	Checked by	Approved by - date	File name	Date	Scale
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

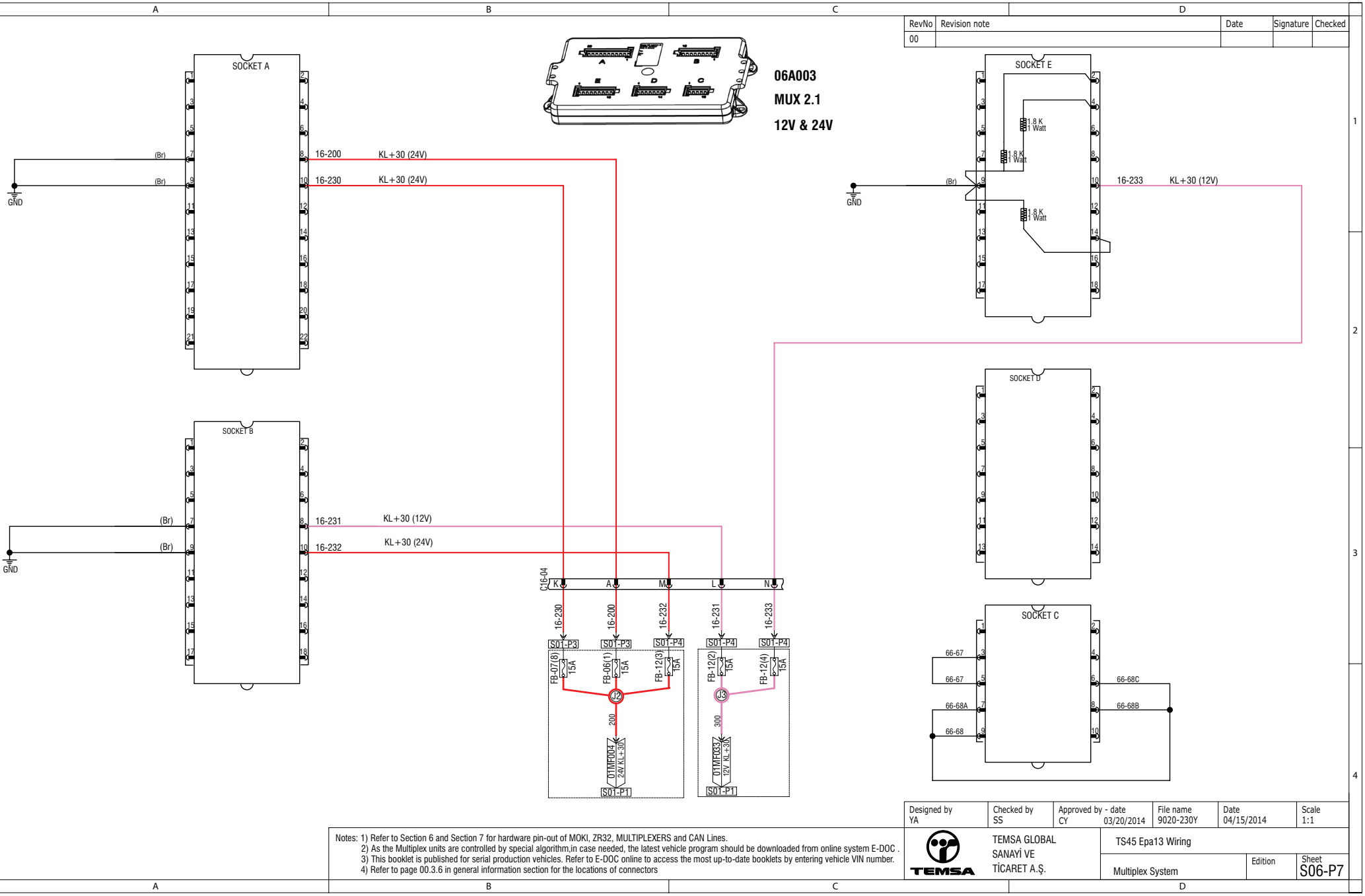
TS45 Epa13 Wiring

Multiplex System

Edition

Sheet S06-P6

SOCKET A (22 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EB_Engine_Start_Switch_Engine_Compartment	ENGINE START	66-76	1	2	66-57	WC POWER	AB_WC_Power_1
EB_Engine_Stop_Switch_Engine_Compartment	ENGINE STOP	66-77	3	4	66-60	WC FAN	AB_WC_Fan_On
EB_Switch_Engine_Room_Lamp_On	ENGINE LAMP SW	66-78	5	6	64-03	HALDEX VALVE	AB_Humidity_Dryer(Haldex)_System
	Ground	E15D	7	8	16-200	KL+30 (24V)	
	Ground	E15E	9	10	16-230	KL+30 (24V)	
EB_Switch_Engine_Rear_Start_Enable	ENGINE IGNITION	66-79	11	12	66-62	WC POWER	AB_WC_Power_2
EB_D+_Alternator_1	D+1	66-81	13	14	26-46	ENG. ROOM LAMP.	AB_Lamps_Engine_Room
EB_D+_Alternator_2	D+2	66-82	15	16	66-65	BACK-UP BUZZER	AB_Buzzer_Reverse_Gear
EB_Sensor_Fire_Engine_Compartment_2	FIRE WARNING SENSOR	66-83	17	18	66-63	LINNIG FAN 2.KADEME	AB_Valve_Radiator_Linnig_Level_1
EB_Sensor_Fire_Preheater_Area	FIRE WARNING SENSOR	66-84	19	20	66-85	AKS YÜK HAFİFLETME	AB_Alternator_Excitation_Temporary_Power
			21	22	66-217	Alternator Excitation POWER	AB_Alternator_Excitation_Temporary_Power
SOCKET B (18 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EC_Sensor_Brake_Lining_Rear_Left_2	LINING SENSOR 2.LEFT BRAKE	64-24	01	02	66-51	yok	AB_Lamp_Park_Rear_Group_Power
EC_Sensor_Brake_Lining_Rear_Right_2	yok	64-25	03	04	16-203F	yok	AB_Lamp_Stop
EC_Sensor_Brake_Lining_Rear_Left_1	LINING SENSOR 2.LEFT BRAKE	64-26	05	06	66-130	yok	AB_Park_Sensor_Power
	Ground	E15B	07	08	16-231	KL+30 (12V)	
	Ground	E15C	09	10	16-232	KL+30 (12V)	
	yok	64-35	11	12			
			13	14			
			15	16			
EB_Switch_Fire_Trace_Warning	yok	66-120	17	18			
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			
	MUX 2.1 Termination	66-67	05	06	66-68C	" 0 "	
	" 0 "	66-68A	07	08	66-68B	" 0 "	
	" 0 "	66-68	09	10			
SOCKET D (14 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
EB_Switch_WC_Occupied	WC OCCUPIED	66-58	01	02			EB_ETHER_SYSTEM_PRESSURE_LOW_INFO
			03	04	36-1023		EB_DPF_Signal(DieselParticulateFilter)
EB_WC_Waste_Tank_Full_Warning	WC FAN	66-59	05	06	36-1095		EB_HEST_Signal(HighExhaustTemp.)
EB_Switch_WC_Emergency_Signal	WC SIGNAL	66-61	07	08	36-1002		EB_DEF_Level_Low_Sgn(DieselExhaustFluid)
EB_Sensor_Engine_Lid_Closed	SAFETY SW.	66-64	09	10	66-88	LUGGAGE OPEN SIGNAL	EB_Hand_Lift_Compartment_Lower_Door_Closed_Signal
EB_Sensor_Fire_Engine_Compartment_1	FIRE WARNIG SENSOR	66-75	11	12			
EC_Tag_Axle_Unloading_Air_Pressure	AKS YÜK HAFIFLETME	66-86	13	14	66-90	Tag Axle Steering Fluid Preesure Sensor	EC_Tag_Axle_Steering_Hydraulic_Pressure
SOCKET E (18 PINS)							
SOFTWARE DESCRIPTION	DESCRIPTION	CABLE	PINS		CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
			01	02	46-01	SIDE, REAR LEFT BACK-UP LAMP	AB_Lamp_Reverse_Gear_Left_Rear_Side
			03	04	46-02	SIDE, REAR RIGHT BACK-UP LAMP	AB_Lamp_Reverse_Gear_Right_Rear_Side
			05	06	66-53		AB_Lamp_Reverse_Gear_Right_Rear
			07	08			
	Ground	E15A	09	10	16-233	KL+30 (12V)	
			11	12	66-87	ROOM LAMP POWER	AB_Lamp_Handiccaped_Lift_Room
			13	14	66-66	Axle Unloading	
			15	16			
			17	18	66-56	BACK UP LAMP	AB_Lamp_Reverse_Gear_Left_Rear



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4) Refer to page 00.3.6 in general information section for the locations of connectors

RevNo	Revision note	Date	Signature	Checked
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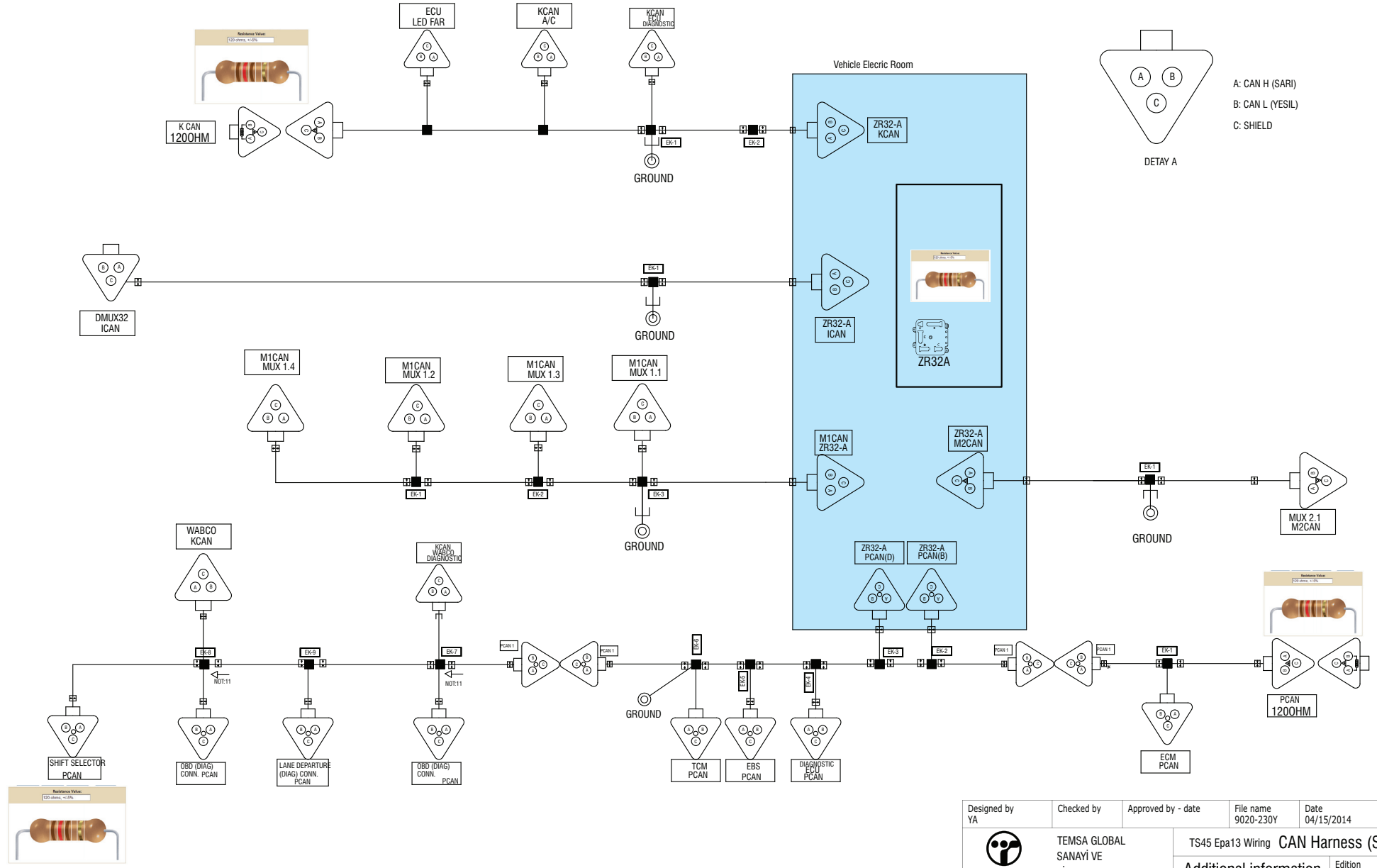

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YA			9020-230Y	04/15/2014	1:1

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring **CAN Harness (Schematic)**

Additional information | Edition | Sheet

07

DISPLAYS AND INSTRUMENTS SYSTEMS

Instrument Cluster Pin Decription Lists 84
(S07-P1) Instrument Cluster Power Wiring 85

Code List & Locations 86
(S07-P2) Instrument Sys. Wiring 2 87

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_Switch-Led_Interior_Lighting
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
09	.		AB_ASR_Plot_Lamp
10	33-31	FRONT FOG LAMP SW	AB_Switch-Led_Fog_Front
11	33-52	PARK/MAIN LIGHT SW	EB_Switch_Low_Beam
12	33-53	DIMMER PARK SW	EB_Switch_Dimmer_Down
13	33-54	DIMMER PARK SW	EB_Switch_Dimmer_Up
14	33-66		EB_Switch_Retarder_Foot_Control_Dis-able
17			EB_Button_Door_Rear_Control
19	33-65		AB_Switch-Led_Master_Ignition
20	13-160		EB_Stalk_Switch_Signal_Problem_Left
21	13-161		EB_Stalk_Switch_Signal_Problem_Right
22	13-162		
28	33-78		AB_Switch-Led_Preheater
29			
30	33-58		EB_Switch_110V_Inverter_Enable
31	33-59		EB_Switch_Interior_Night_Lamp
32	33-68		EB_Switch_Air_Horn

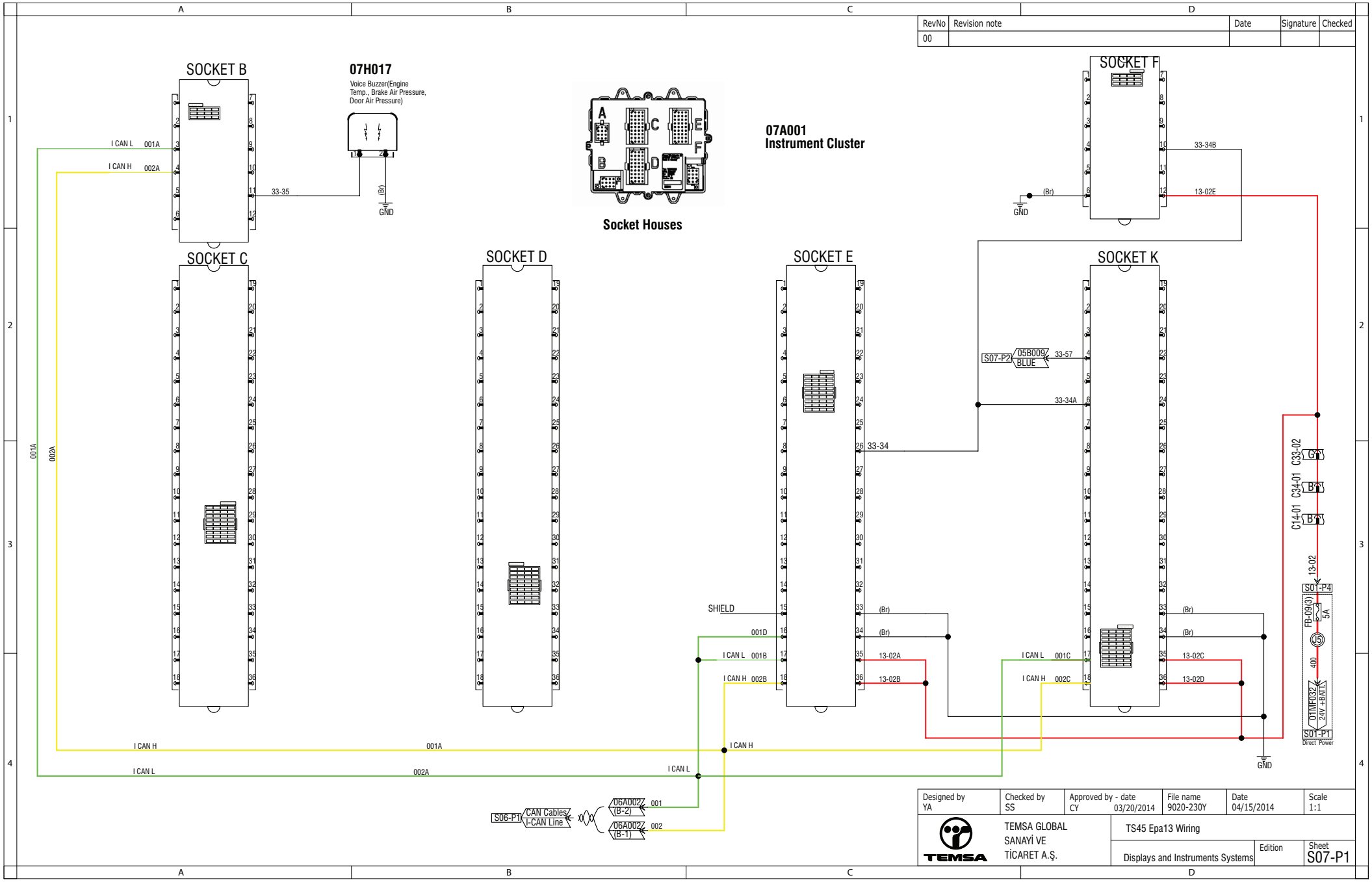
SOCKET F/1 (12 PINS)			
PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
04	13-48	ZR32 K-Line	
09	E4	Ground	
10	33-34	AUS Wake-Up for DMUX	
12	13-02E	Power (KL+30)	

SOCKET D/1 (36 PINS)			
PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
01	33-03	Hazard SwitchMUX Input	EB_Switch_Hazard
02	13-47A	Ignigtion Switch Signal	EB_KL15
03	33-01	START STOP CONTROL SW	EB_Switch_Engine_Start_Signal
04	33-02	START STOP CONTROL SW	EB_Switch_Engine_Stop_Signal
05	33-67	FRONT DOOR CONTROL SW	EB_Switch_Tag_Axle_Unloading_Enable
06	33-07	CRUISE CON. SET+ / SET- SW.	EB_Stalk-Button_Cruise_Control_Decelerate
07			
08	33-08	CRUISE CON. SET+ / SET- SW.	
09	33-04	HAZARD SW	AB_Switch-Led_Hazard
10	33-32	IGNIGTION SW.	EB_Ignition_Key_Accessories_Signal
11	33-33	EMERGENCY STOP SW.	EB_Emergency_Switch
12	33-09	CRUISE CONT. ON-OFF SW.	EB_Stalk-Button_Cruise_Control_On
13	33-11	READING LAMP SW.	EB_Switch_Reading_Lamp
14	33-12	READING LAMP SW.	EB_Switch_Reading_Lamp_Position_2
15	33-13	INTERIOR SW	EB_Switch_Interior_Lighting_Position_1
16	33-14	INTERIOR SW	EB_Switch_Interior_Lighting_Position_2
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		EB_Button_Door_Front_Control
20	33-180		EB_Switch_Battery_Save_Mode
21	33-16	AISLE LAMP SW.	EB_Switch_Aisle_Lighting
22	33-17	WC CONT. SW.	EB_Switch_WC_Power
23	33-19	MIRROR HEATING SW	EB_Switch_Mirror_Heating(Mekra-Mirror)
24	33-21	CENTRAL LOCK CONT. SW.	EB_Stalk-Button_Cruise_Control_Accelerate
25	33-22	STEERING CONTROL SW	EB_Switch_Steering_Column_Position_Con-trol_Power
26	33-24	KNEELING LIFTING SW	EB_Switch_Kneeling
27	33-10	CRUISE CONT. ON-OFF SW.	AB_Switch-Led-Cruise_Control_On
28			
29			
30	33-25	KNEELING-LIFTING SW	EB_Switch_Lifting
31	33-26	EGZOST BRAKE ON-OFF SW.	EB_Switch_Exhaust_Brake_Enable-Level_1
32	33-28	EGZOST BRAKE SW.	EB_Switch_Exhaust_Brake_Level_3
33	33-29	EGZOST BRAKE SW.	EB_Switch_Exhaust_Brake_Level_2
34	33-30	FRONT FOG LAMP SW	EB_Switch_Front_Fog_Lamp
35	13-49B	ASR SW	EB_Switch_ASR_Disable
36	33-18	WC CONT. SW.	AB_Switch-Led_WC_Power



SOCKET E/1 (36 PINS)			
PINS	CABLE	DESCRIPTION	SOFTWARE DESCRIPTION
01	33-20	MIRROR HEATING SW	AB_Switch-Led_Mirror_Heater
02	33-23	KNEELING-LIFTING SW	AB_Switch-Led_Kneeling_Lifting
03			
04			
05			
06			
07			
08			
09			
10			
11			
12			
13			
14			
15	SHIELD		
16	001D	K CAN-L	
17	001B	K CAN-L	
18	002B	K CAN-H	
19	33-36	SIGNAL ARM SW.	EB_Stalk-Switch_Left_Signal
20	33-37	SIGNAL ARM SW.	EB_Stalk-Switch_Right_Signal
21	33-38	SIGNAL ARM SW.	EB_Stalk-Button_High_Beam
22	33-39	SIGNAL ARM SW.	EB_Stalk-Button_High_Beam(Selector)
23	33-40	SIGNAL ARM SW.	EB_Stalk-Switch_Wiper_Interval_Signal
24	33-60K		
25			
26	33-34	.	
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)	

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


SOCKET B
07H017
Voice Buzzer(Engine Temp., Brake Air Pressure, Door Air Pressure)
I CAN L 001A
I CAN H 002A
33-35
(Br)
GND
Socket Houses
07A001
Instrument Cluster
SOCKET F
33-34B
13-02E
SOCKET C
SOCKET D
SOCKET E
SOCKET K
S07-P2
05B009
BLUE
33-57
33-34A
33-34
001A
002A
SHIELD
001D
I CAN L 001B
I CAN H 002B
13-02A
13-02B
I CAN L 001C
I CAN H 002C
13-02C
13-02D
C33-02
C34-01
C14-01
13-02
S01-P4
FB-09(3)
5A
01MF032
24V +BATT
S01-P1
Direct Power
S06-P1
CAN Cables
I-CAN Line
06A002
(B-2)
06A002
(B-1)
001
002
RevNo
Revision note
Date
Signature
Checked
00
Designed by
YA
Checked by
SS
Approved by - date
CY 03/20/2014
File name
9020-230Y
Date
04/15/2014
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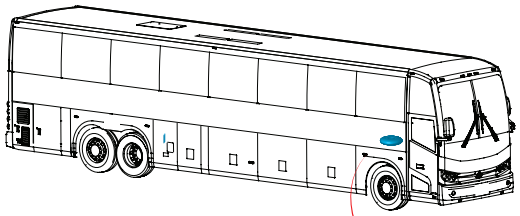
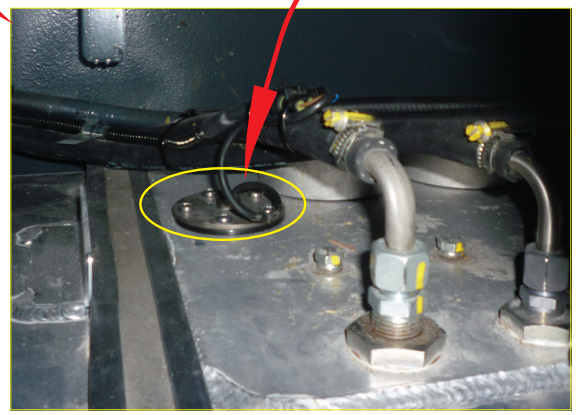
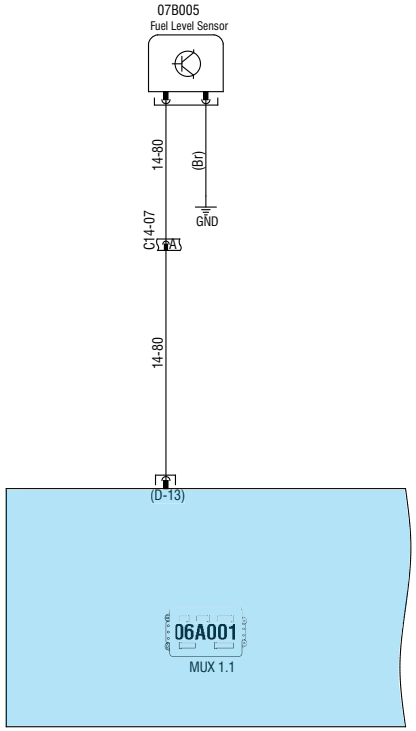
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
Displays and Instruments Systems
Edition
Sheet
S07-P1

Code	Spanish	Français
06A001	Multiplexor 1.1	Mux 1.1
07B005	Sensor de Nivel de Combustible	Capteur Réserve De Carburant





RevNo	Revision note	Date	Signature	Checked
01	With 03K020 03K026 has changed.	21 June 2014	DN	
03	With 03K020 03K026 has changed.	01 Apr 2015	DN	



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TS45 Epa13 Wiring

Displays and Instruments Systems | Edition | Sheet S07-P2

08

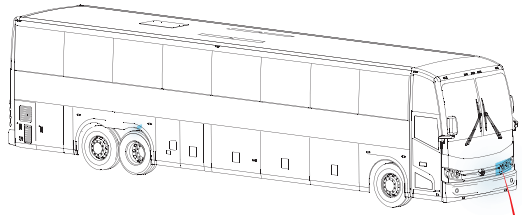
BRAKE SYSTEM

Code List & Locations 90
(S08-P1) Park Brake Switches,Temporary Bus Stop Valve 91

Code List & Locations 92
(S08-P2) Brake Wear Pad Sensors Wiring 93

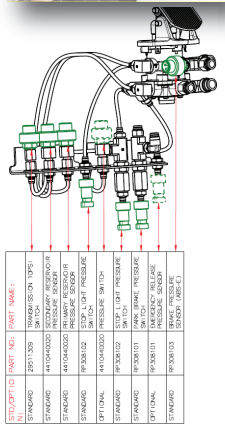
Code List & Locations 94
(S08-P3) Foot Brake Pedal and Level Transmitter Wiring 95

Code	Spanish	Français
08S003	Interruptor de Freno de Estacio-namiento	Commande De Frein Sur Echappement
08S008	Interruptor de freno de pie	Contacteur de frein à pied
06A005	Multiplexor 1,3	Mux 1,3
06A004	Multiplexor 1,2	Mux 1,2

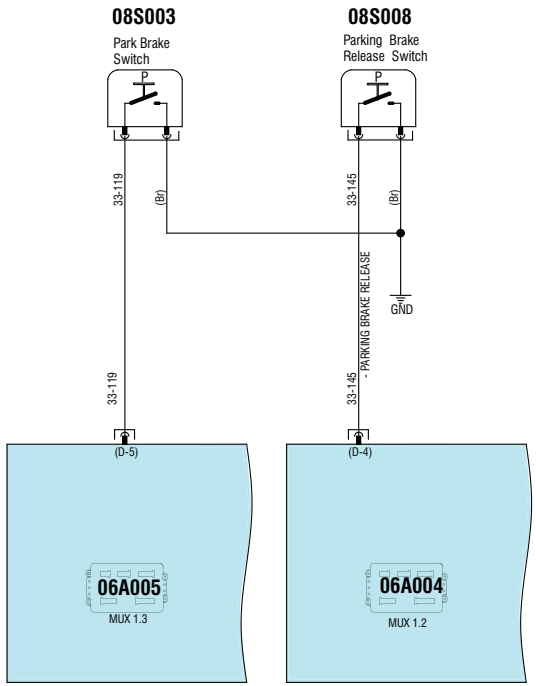








RevNo	Revision note	Date	Signature	Checked
00	Rev.1 : 08S001 has been canceled , 08Y001 moved 32. system.	21 June 2014	DN	YA



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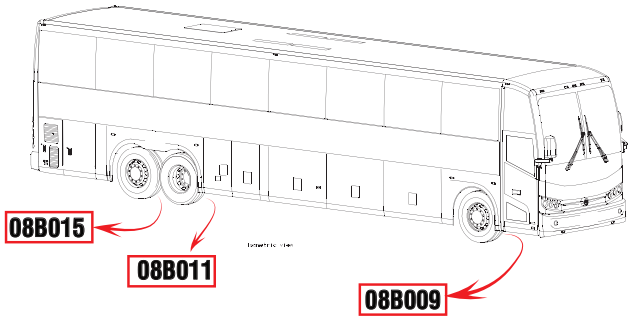
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

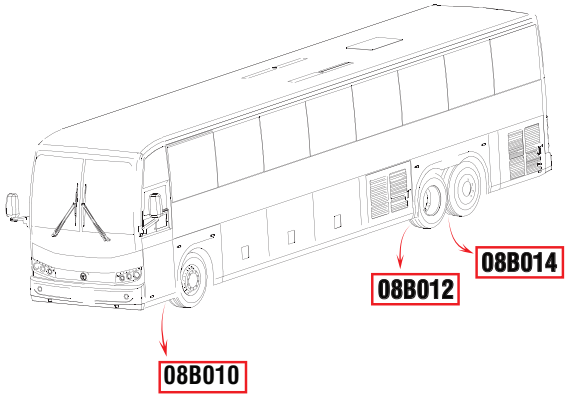
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

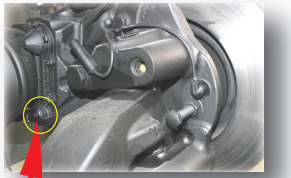
TS45 Epa13 Wiring

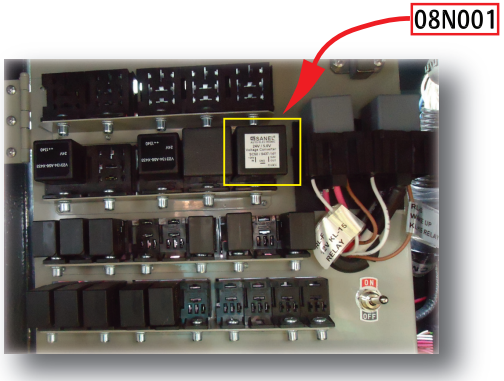
Brake System (Park Brake Switches,Temporary Bus Stop Valve) | Edition | Sheet S08-P1

Code	Spanish	Français
08B009	Sensor de Desgaste de las Pastillas de Freno Derechas	Capteur Garniture De Frein Essieu Av À Dr
08B015	Sensor del forro del freno del eje derecho trasero	Sensor del forro del freno del eje derecho trasero
08B011	Sensor de Desgaste de las Pastillas de Freno Derechas	Capteur Garniture De Frein Aa À Dr
08B010	Sensor de Desgaste de las Pastillas de Freno Izquierdas	Capteur Garniture De Frein Essieu Av À Ga
06A005	Multiplexor 1,3	Mux 1.3
06A003	Multiplexor 2,1	Mux 2.1
08B014	Sensor del forro del freno del eje derecho trasero	Sensor del forro del freno del eje derecho trasero
08B012	Sensor de Desgaste de las Pastillas de Freno Izquierdas	Capteur Garniture De Frein Aa À Ga
10B009	Sensor de descarga del eje	Sensor de descarga del eje
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30









RevNo	Revision note	Date	Signature	Checked
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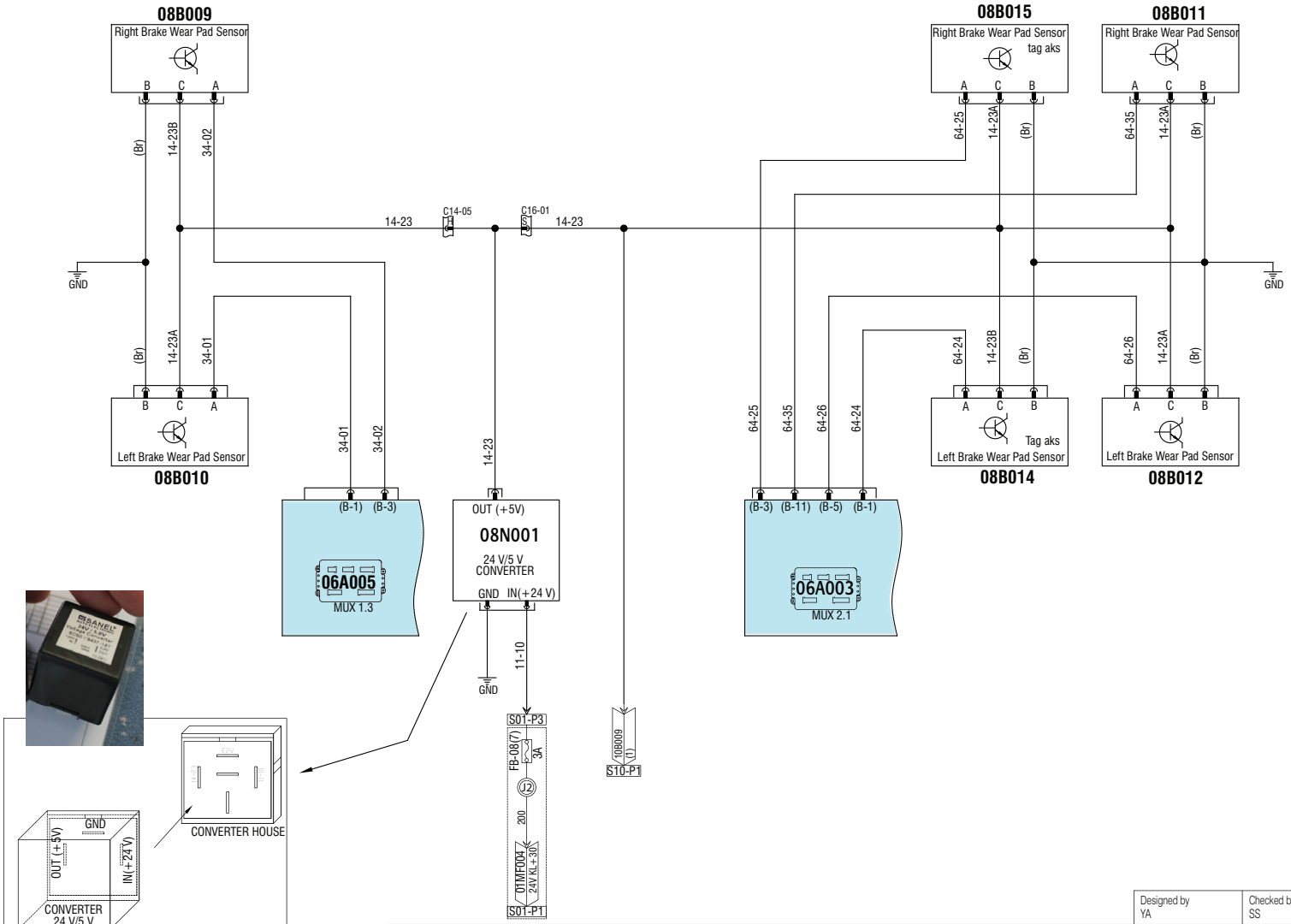

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YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

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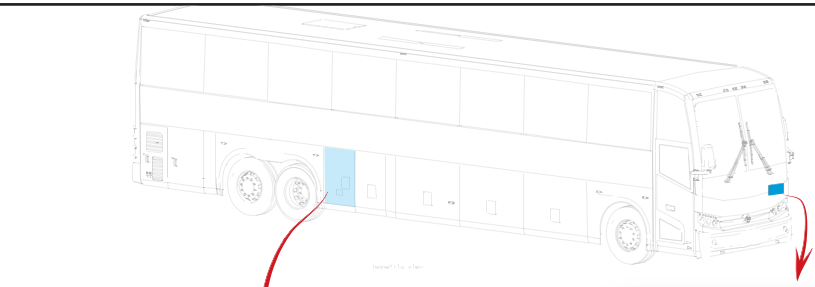
TS45 Epa13 Wiring

Brake System (Brake Wear Pad Sensors & System)

Edition

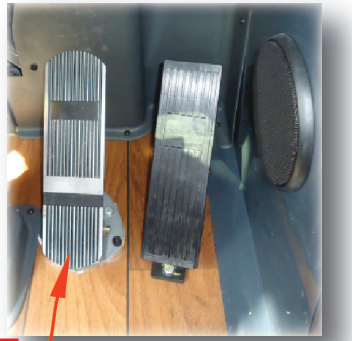
Sheet S08-P2

Code	Spanish	Français
09A008	Pedal de Freno	Pedale Frein Au Pied
08K005	Relé de Luz de Parada	Relais Du Feu D'Arrêt
08B002	Transmisor de Nivel del Pedal de Freno 1	Transmetter 1 Niveau De Pedale Frein Au Pied
08B003	Transmisor de Nivel del Pedal de Freno 2	Transmetter 2 Niveau De Pedale Frein Au Pied
06A004	Multiplexor 1,2	Mux 1.2
06A001	Multiplexor 1.1	Mux 1.1
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
01MF033	Alimentación (suministrada directamente de la batería para información de memoria) de 12V KL-31	12V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
05A026	Grupo de Diodos y Resistencias	Bloc De Diodes Et De Resistances

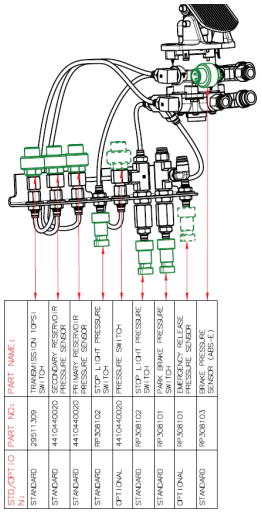




08K005
Stop Lamp Relay



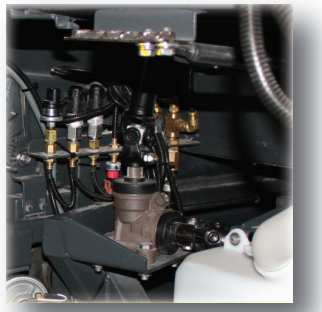
09A008



STD/OPTIO	PART NO.:	PART NAME:
STANDARD	2911309	TRANSMISSION TIPS® SWITCH
STANDARD	4410440000	SECONDARY RESERVOIR PRESSURE SENSOR
STANDARD	4410440000	PRIMARY RESERVOIR PRESSURE SENSOR
STANDARD	RPX08102	STOP LIGHT PRESSURE SWITCH
OPTIONAL	4410440000	PRESSURE SWITCH
STANDARD	RPX08102	STOP LIGHT PRESSURE SWITCH
STANDARD	RPX08101	PARK BRAKE PRESSURE SWITCH
OPTIONAL	RPX08101	EMERGENCY RELEASE PRESSURE SENSOR
STANDARD	RPX08103	BRAKE PRESSURE SENSOR (ABS-E)

08B002
Foot Brake Pedal
Level Transmitter 1

08B003
Foot Brake Pedal
Level Transmitter 2



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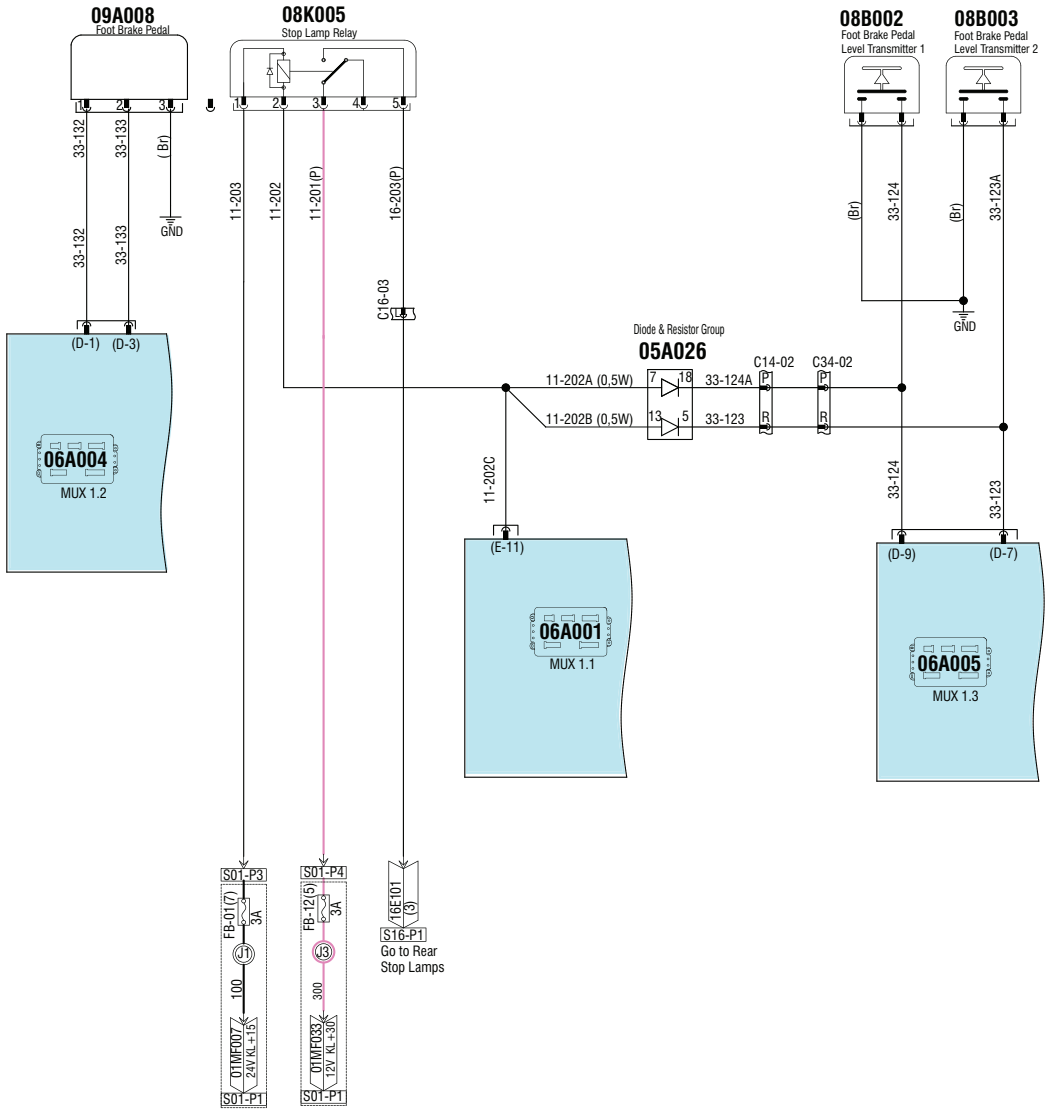

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.

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YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Brake System
(Foot Brake Pedal and Level Transmitter)

Edition

Sheet S08-P3

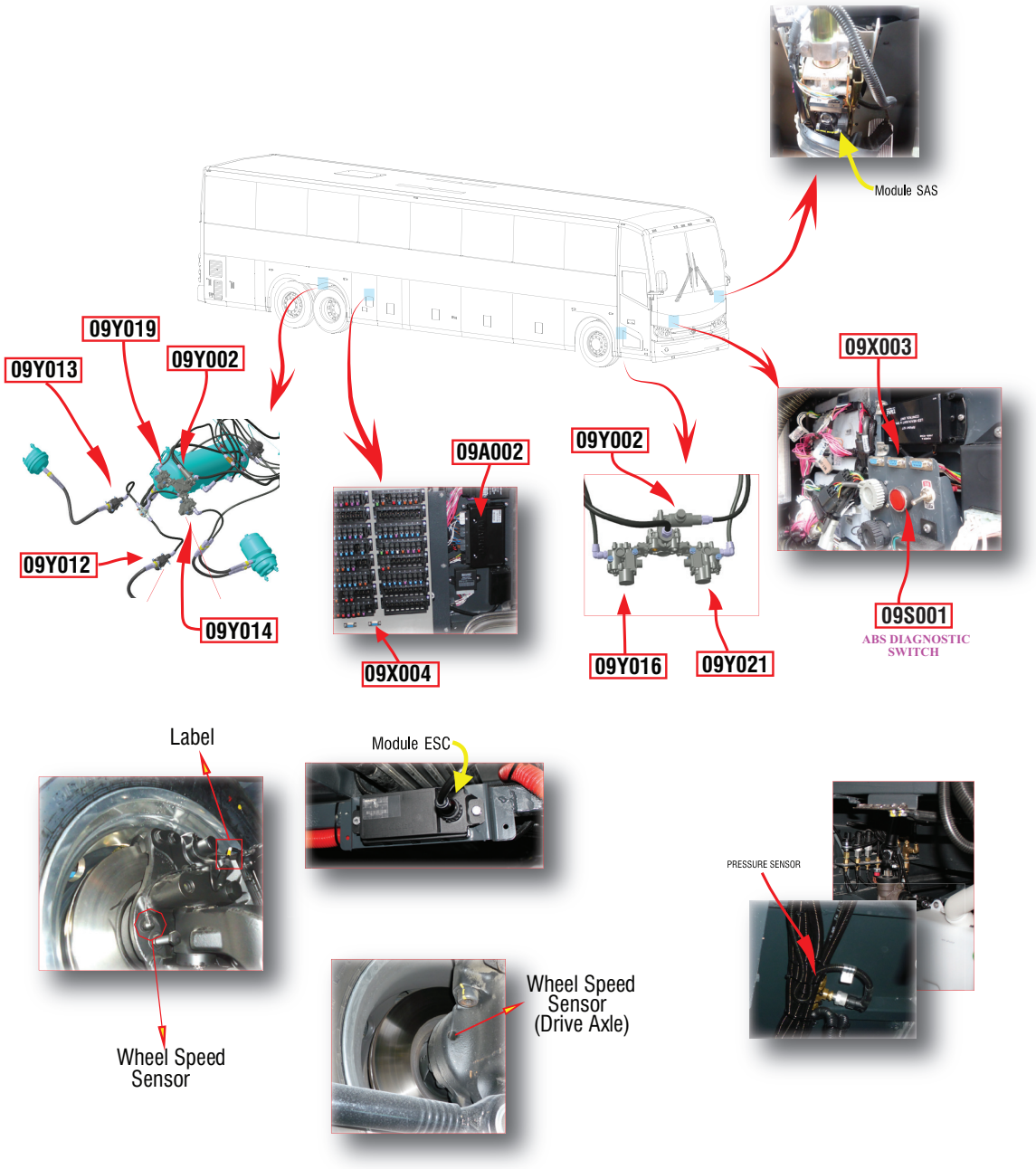
09

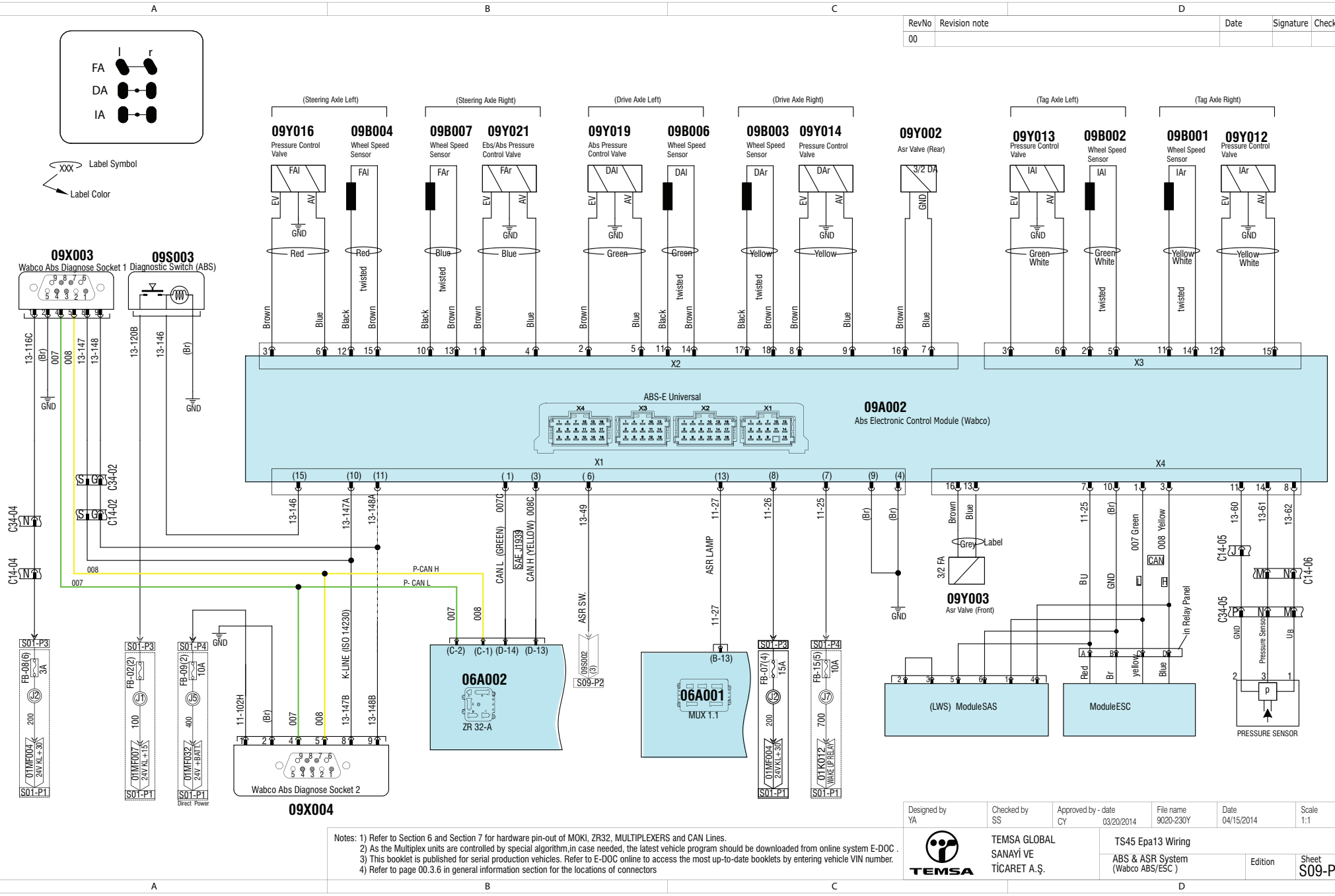
ABS & ASR And ESC SYSTEM

Code List & Locations 98
(S09-P1) Wabco ABS/ESC Wiring 99

Code List & Locations 100
(S09-P2) Brake Level Switchs Wiring..... 101

Code	Spanish	Français
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)
01MF004	Alimentación del Panel de Relés Kl30	Alimentation Du Panneau Des Relais Kl30
01MF007	Alimentación del Panel de Relés Kl15	Alimentation Du Panneau Des Relais Kl15
01MF032	Alimentación (suministrada directamente de la batería para información de memoria) de 24V KL-30	24V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
09A002	Módulo de Control Electrónico de ABS (WABCO)	Calculateur Système Antiblocage Abs
09B001	Sensor de Velocidad de la Rueda (Eje Adicional Derecho)	Capteur Vitesse De Rotation Za Dr
09B002	Sensor de Velocidad de la Rueda (Eje Adicional Izquierdo)	Capteur Vitesse De Rotation Za Ga
09B003	Sensor de Velocidad de la Rueda (Eje de Dirección Derecho)	Capteur Vitesse De Rotation Roue Av Dr
09B004	Sensor de Velocidad de la Rueda (Eje de Dirección Izquierdo)	Capteur Vitesse De Rotation Roue Av Ga
09B006	Sensor de Velocidad de la Rueda (Eje de Tracción Derecho)	Capteur Vitesse De Rotation Aa Dr
09B007	Sensor de Velocidad de la Rueda (Eje de Tracción Izquierdo)	Capteur Vitesse De Rotation Aa Ga
09S002	Interruptor Asr	Commutateur Régulation Antipatinage Asr
09S003	Interruptor de Diagnóstico (Abs)	Prise De Diagnostic
09X003	Toma de Conexión para Diagnóstico del ABS Wabco	Culot De Diagnostic Abs Wabco
09X004	Toma de Conexión para Diagnóstico del ABS Wabco	Culot De Diagnostic Abs Wabco 2
09Y002	Válvula Asr (Trasero)	Valve Commutation Régulation Anti-Patinage Asr (Arriere)
09Y003	Válvula Asr (Frente)	Valve Commutation Régulation Anti-Patinage Asr (avant)
09Y012	Válvula de Control de Presión de ABS (Eje Adicional Derecho)	Valve Commande De Pression Za Dr
09Y013	Válvula de Control de Presión de ABS (Eje Adicional Izquierdo)	Soupape De Commande Pression Abs (Essieu Supplementaire Gauche)
09Y014	Válvula de Control de Presión de EBS (Eje de Dirección Derecho)	Valve Commande Pression Essieu Avd
09Y016	Válvula de Control de Presión de EBS (Eje de Dirección Izquierdo)	Valve Commande Pression Essieu Avg
09Y019	Válvula de Control de Presión de ABS (Eje de Tracción Derecho)	Soupape De Commande Pression Abs (Essieu Directeur Droite)
09Y021	Válvula de Control de Presión de EBS (Eje de Tracción Izquierdo)	Valve Commande De Pression Aa Ga




FA
DA
IA
l
r
XXX Label Symbol
Label Color
RevNo | Revision note | Date | Signature | Checked
00
(Steering Axle Left)
09Y016 Pressure Control Valve
09B004 Wheel Speed Sensor
(Steering Axle Right)
09B007 Wheel Speed Sensor
09Y021 Ebs/Abs Pressure Control Valve
(Drive Axle Left)
09Y019 Abs Pressure Control Valve
09B006 Wheel Speed Sensor
(Drive Axle Right)
09B003 Wheel Speed Sensor
09Y014 Pressure Control Valve
09Y002 Asr Valve (Rear)
(Tag Axle Left)
09Y013 Pressure Control Valve
09B002 Wheel Speed Sensor
(Tag Axle Right)
09B001 Wheel Speed Sensor
09Y012 Pressure Control Valve
09X003 Wabco Abs Diagnose Socket 1
09S003 Diagnostic Switch (ABS)
X2
X3
ABS-E Universal
09A002 Abs Electronic Control Module (Wabco)
X1
X4
09Y003 Asr Valve (Front)
06A002 ZR 32-A
06A001 MUX 1.1
(LWS) ModuleSAS
ModuleESC
PRESSURE SENSOR
Wabco Abs Diagnose Socket 2
09X004
P-CAN H
P- CAN L
CAN L (GREEN)
CAN H (YELLOW)
SAE J1939
K-LINE (ISO 14230)
ASR SW.
ASR LAMP
Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors
Designed by YA
Checked by SS
Approved by - date CY 03/20/2014
File name 9020-230Y
Date 04/15/2014
Scale 1:1
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
ABS & ASR System (Wabco ABS/ESC)
Edition
Sheet S09-P1

Code	Spanish	Français
05S011	Interruptor de Desactivación del Control de Freno de Pie del Retardador	Interrupteur De Commande De Frein Au Pied De Ralentisseur
07A001	Grupo de Instrumentos	Combiné D'Instruments
08S002	#YOK	#YOK
08S007	Interruptor de Nivel del Freno de Compresión	Contacteur D'Activation Du Frein Moteur
09A002	Módulo de Control Electrónico de ABS (WABCO)	Calculateur Système Antiblocage Abs
09S002	Interruptor Asr	Commutateur Régulation Antipatinage Asr
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur



RevNo	Revision note	Date	Signature	Checked
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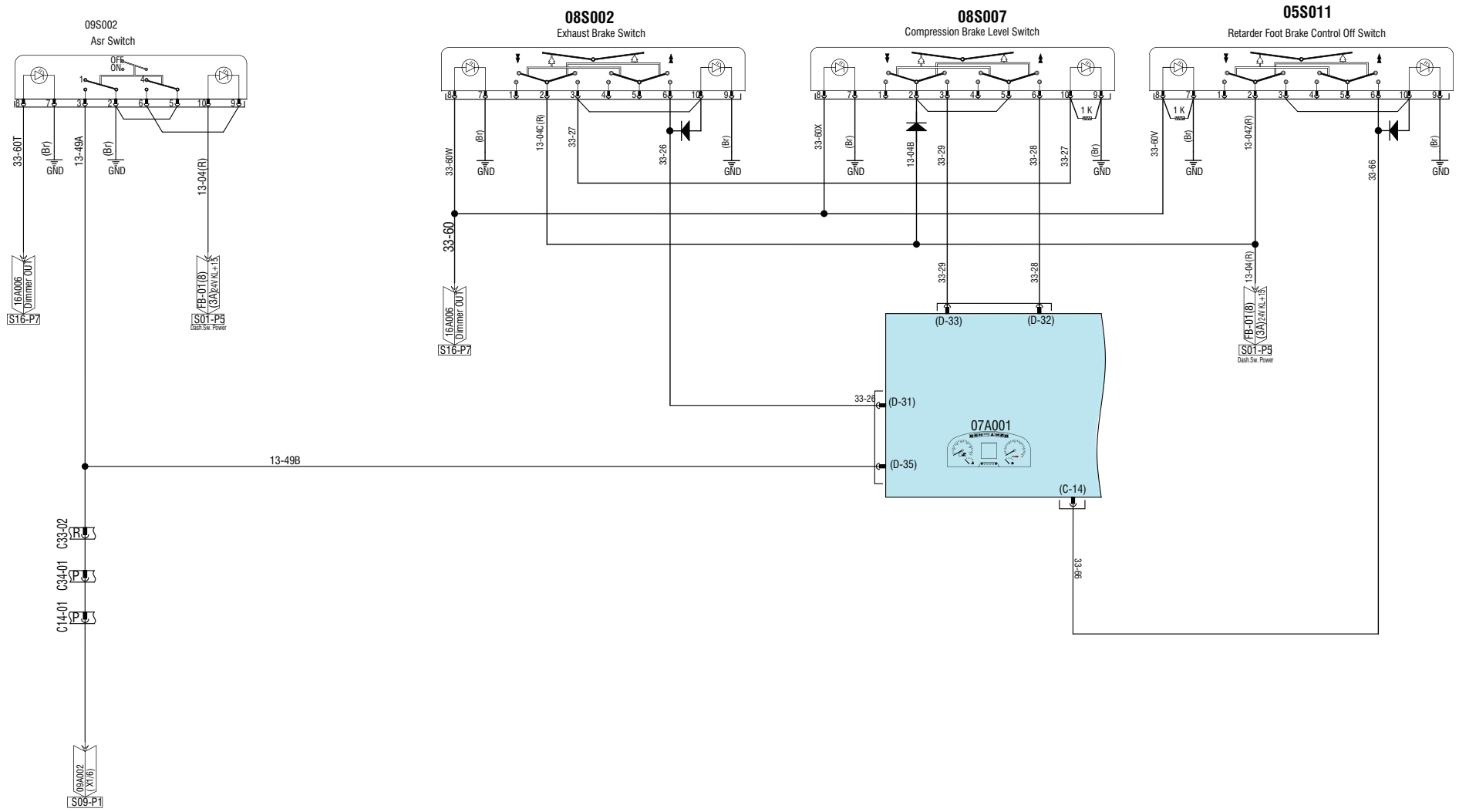

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Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

ABS & ASR System (Brake Level Switch)

Edition

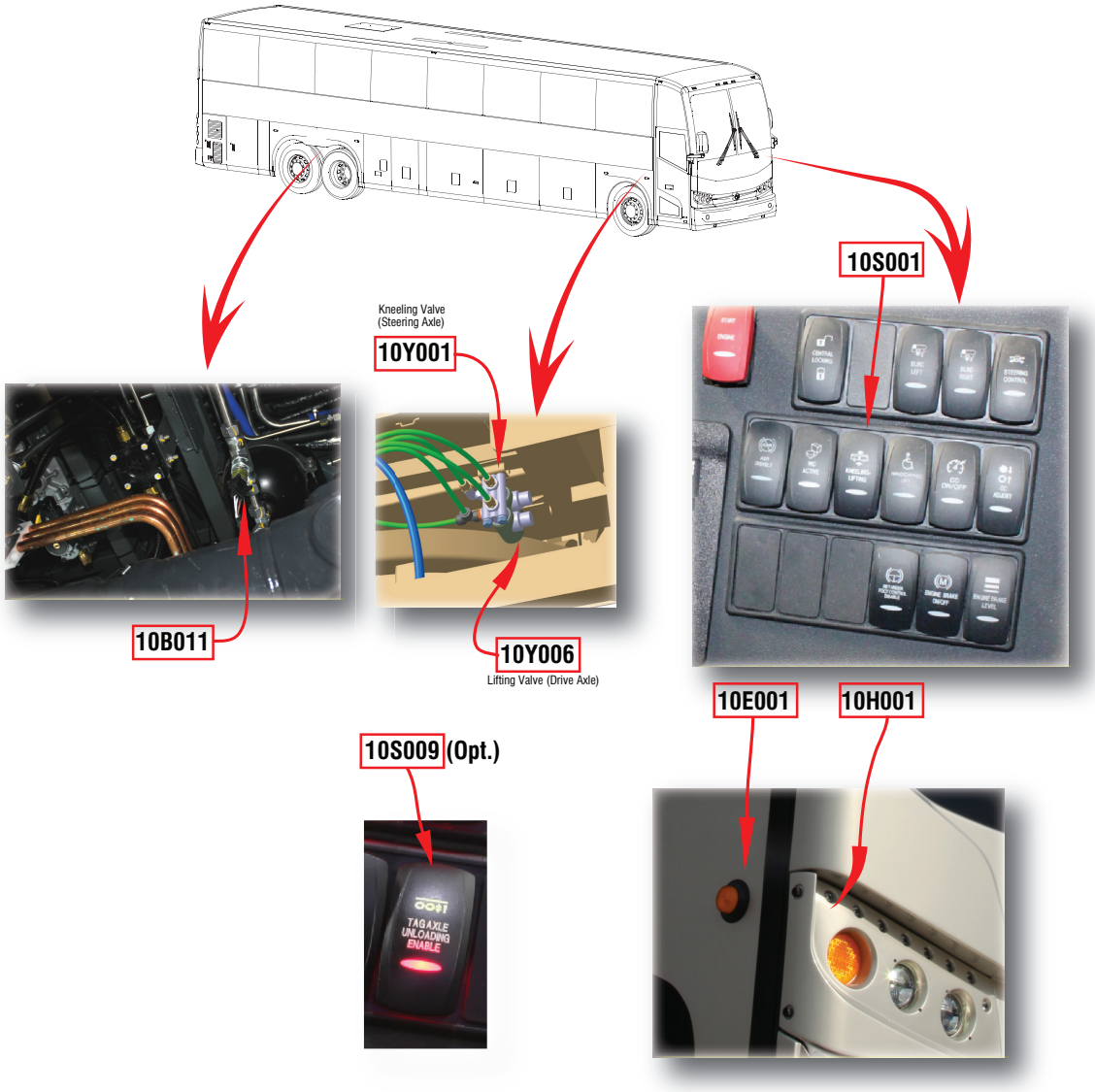
Sheet S09-P2

10 AIR SUSPENSION SYSTEM

Code List & Locations 104
(S10-P1) Kneeling & Lifting, Tag Axle Steering Wiring 105

Code List & Locations 106
(S10-P2) Air Pressure Sensors & Air Dryer Wiring 107

Code	Spanish	Français
06A001	Multiplexor 1.1	Mux 1.1
06A003	Multiplexor 2,1	Mux 2.1
06A004	Multiplexor 1,2	Mux 1.2
07A001	Grupo de Instrumentos	Combiné D'Instruments
10B009	Sensor de descarga del eje	Sensor de descarga del eje
10B010	Sensor de descarga del eje	Sensor de descarga del eje
10B011		
10E001	Luz de Advertencia Activa de la Válvula de Elevación	Voyant Avertisseur D'Abaissement
10H001	Zumbador de descenso (exterior)	Avertisseur sonore de réduction (externe)
10S001	Interruptor de Válvula de Nivel-ación	Commande Soupape De Stabilisation
10S009	Interruptor de descarga del eje	Interruptor de descarga del eje
10Y001	Válvula de Inclinación (Eje de Dirección)	Électrovalve Abaisser
10Y006	Válvula de Elevación (Eje de Tracción)	Electrovanne Relever
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur



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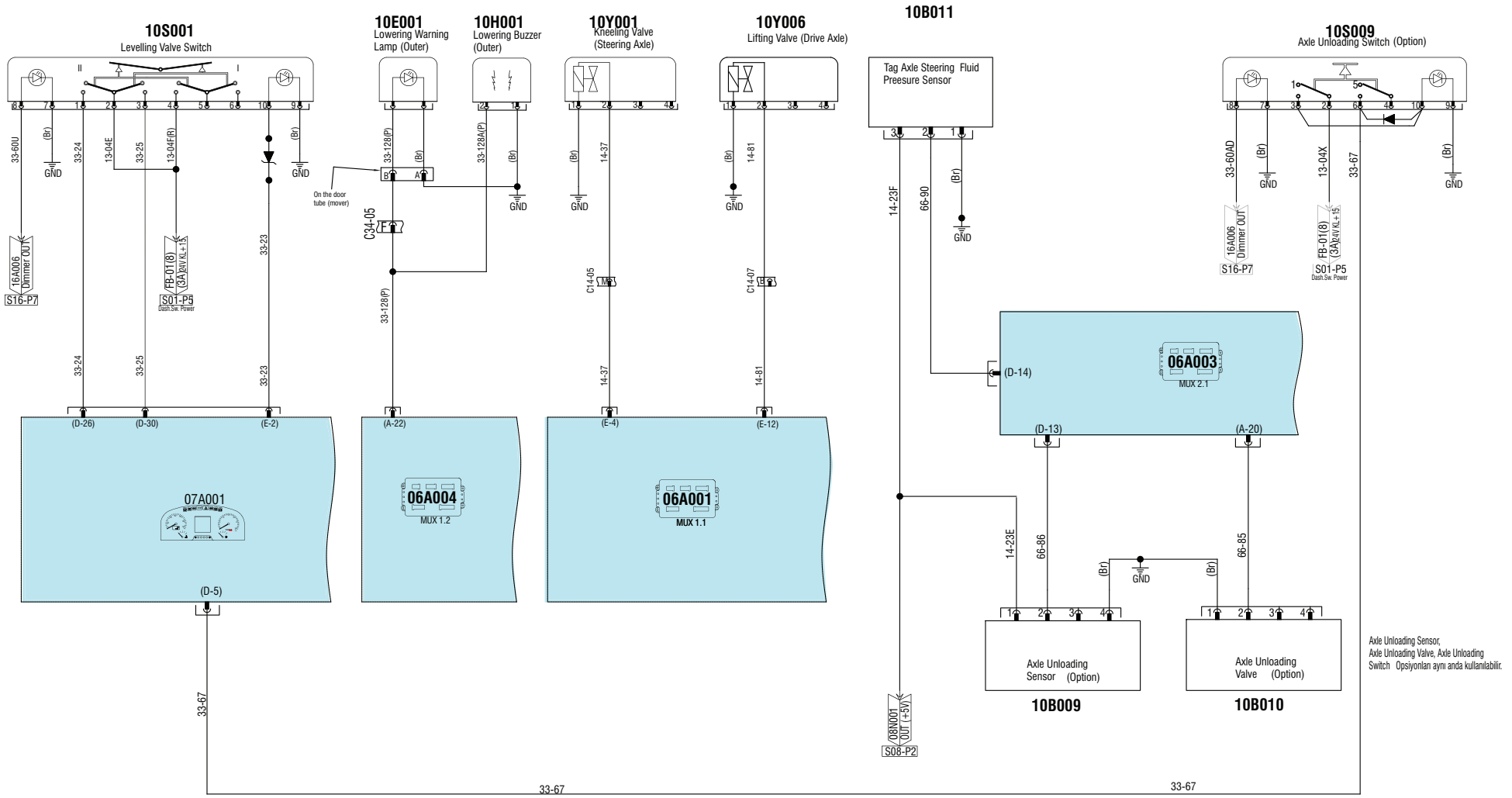

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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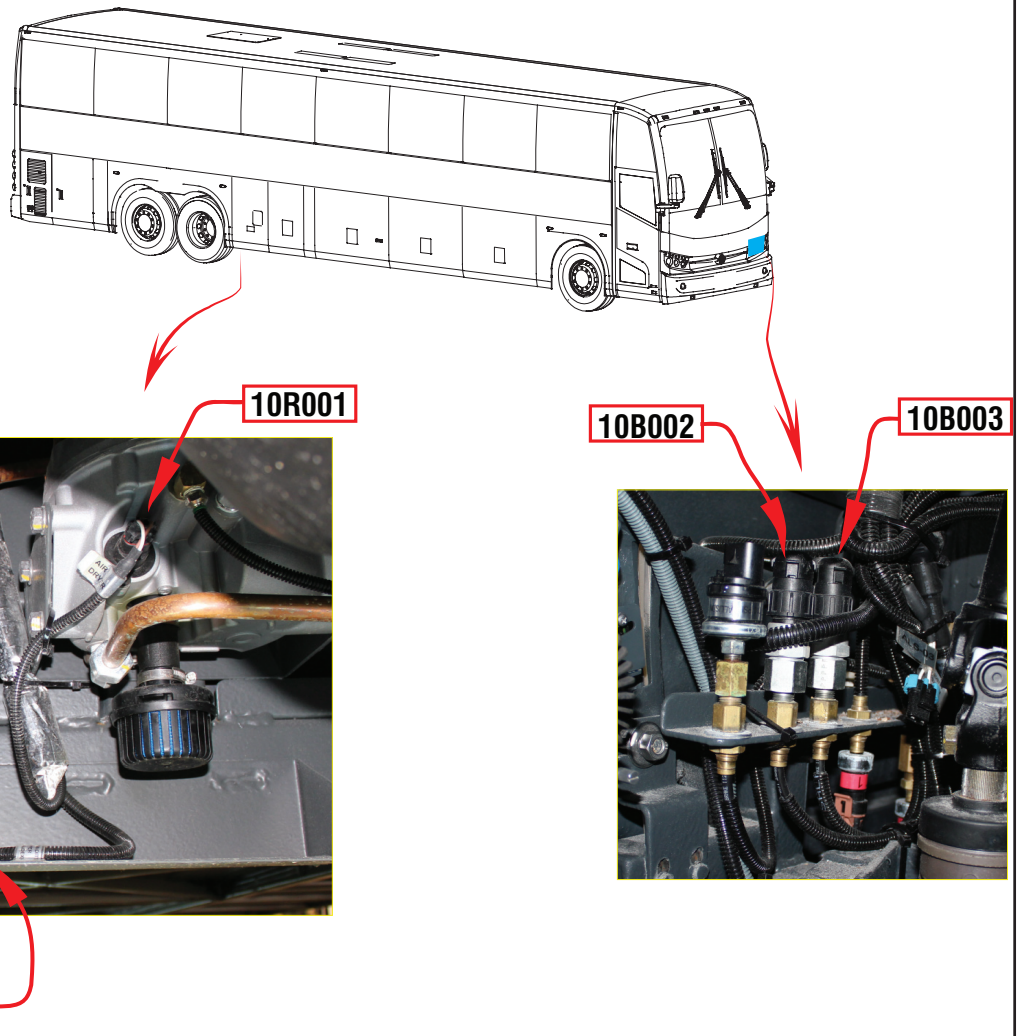
TS45 Epa13 Wiring

Air Suspension System (Kneeling& Lifting Tag Axle Steering)

Edition

Sheet S10-P1

Code	Spanish	Français
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
05B014	Retardador del Transmisor de Nivel del control de Freno 1	Transmetteur niveau 1 du contôle de la pédale de frein du ralentisseur
06A003	Multiplexor 2,1	Mux 2.1
06A005	Multiplexor 1,3	Mux 1.3
10B002	Sensor de Presión de Aire 1 (Depósito de Aire) (Freno Del-antero)	Manocontacteur Pression De Réserve Correction D'Assiette Nr
10B003	Sensor de Presión de Aire 2 (Depósito de Aire) (Freno Trasero)	Manocontacteur Pression De Réserve Correction D'Assiette Nr
10R001	Secador de Aire	Dessiccateur D'Air
10Y012	Secador de Aire (Haldex)	Dessiccateur D'Air (Haldex)



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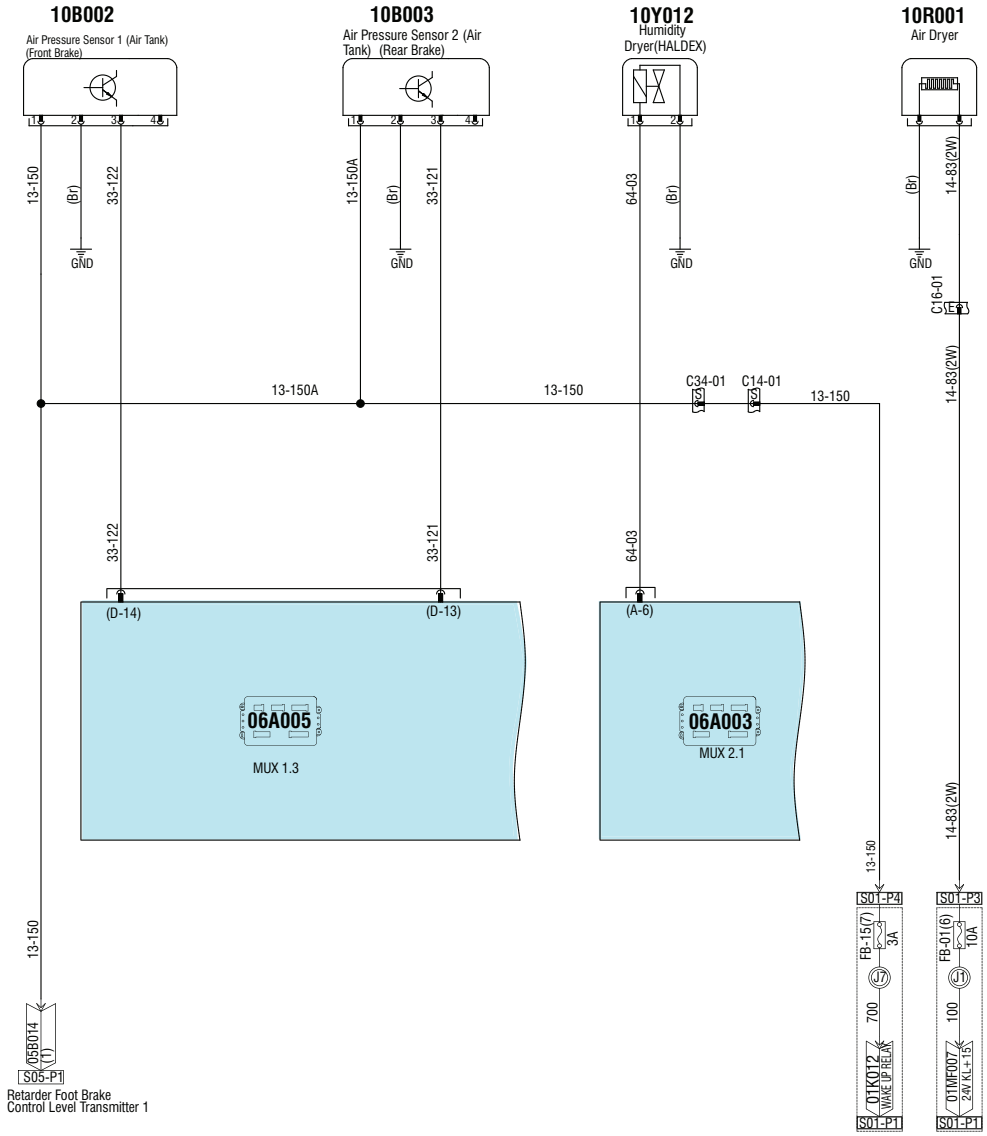

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

Designed by	Checked by	Approved by - date	File name	Date	Scale
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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Air Suspension System (Air Pressure Sensors & Air Dryer

Edition

Sheet S10-P2

11 DOOR SYSTEMS

Code List & Locations 110
(S11-P1) Door Systems Wiring 111

Code	Spanish	Français
01MF032	Alimentación (suministrada directamente de la batería para información de memoria) de 24V KL-30	24V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
06A002	Zr32-E	Zr32-E
06A004	Multiplexor 1,2	Mux 1.2
06A011	Multiplexor 1,4	Mux 1.4
07A001	Grupo de Instrumentos	Combiné D'Instruments
11B002	Interruptor de Ppresión (Presión de Apertura de Puerta 1)	Manocontacteur Pression D'Ouverture Porte 1
11B015	Interruptor Principal de Presión de Puerta Delantera	Commande Pression Principale Portiere Avant
11E008	Luz de Puerta Delantera	Lampe Portiere Avant
11E012	Conector de diagnóstico 1 Kibes RS232	Conector de diagnóstico 1 Kibes RS232
11S001	Micro Switch de Seguridad (Puerta Delantera)	Contacteur À Ondes De Pression Protection Pincement Porte 1
11S002	Interruptor de Control de Puerta Delantera	Contacteur Porte 1 Conducteur
11S017	Micro Switch de Posición de Puerta Delantera Abierta/Cerrada	Micro-Interrupteur Ouverture/Fermeture Portiere Avant
11S026	Micro Switch de Posición de Puerta Delantera Abierta/Cerrada 2	Micro-Interrupteur Ouverture/Fermeture Portiere Avant 2
11S037	Interruptor 1 de luz de pared de compuerta frontal	Interrupteur d'alimentation du mur de la porte avant_1
11Y005	Electroválvula de Funcionamiento de la Llave de Emergencia de Puerta Delantera (Exterior)	Electrovanne Commande Robinet De Secours Porte 1
11Y006	Electroválvula de Funcionamiento de la Llave de Emergencia de Puerta Delantera (Interior)	Electrovanne Commande Robinet De Secours Porte 1
11Y007	Válvula de Control de Puerta Delantera	Electrovalve Porte 1
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
16E018	Lámpara de Iluminación de Escalón 1 de Puerta Delantera	Lampe D'Eclairage Des Pas De La Porte Avant 1



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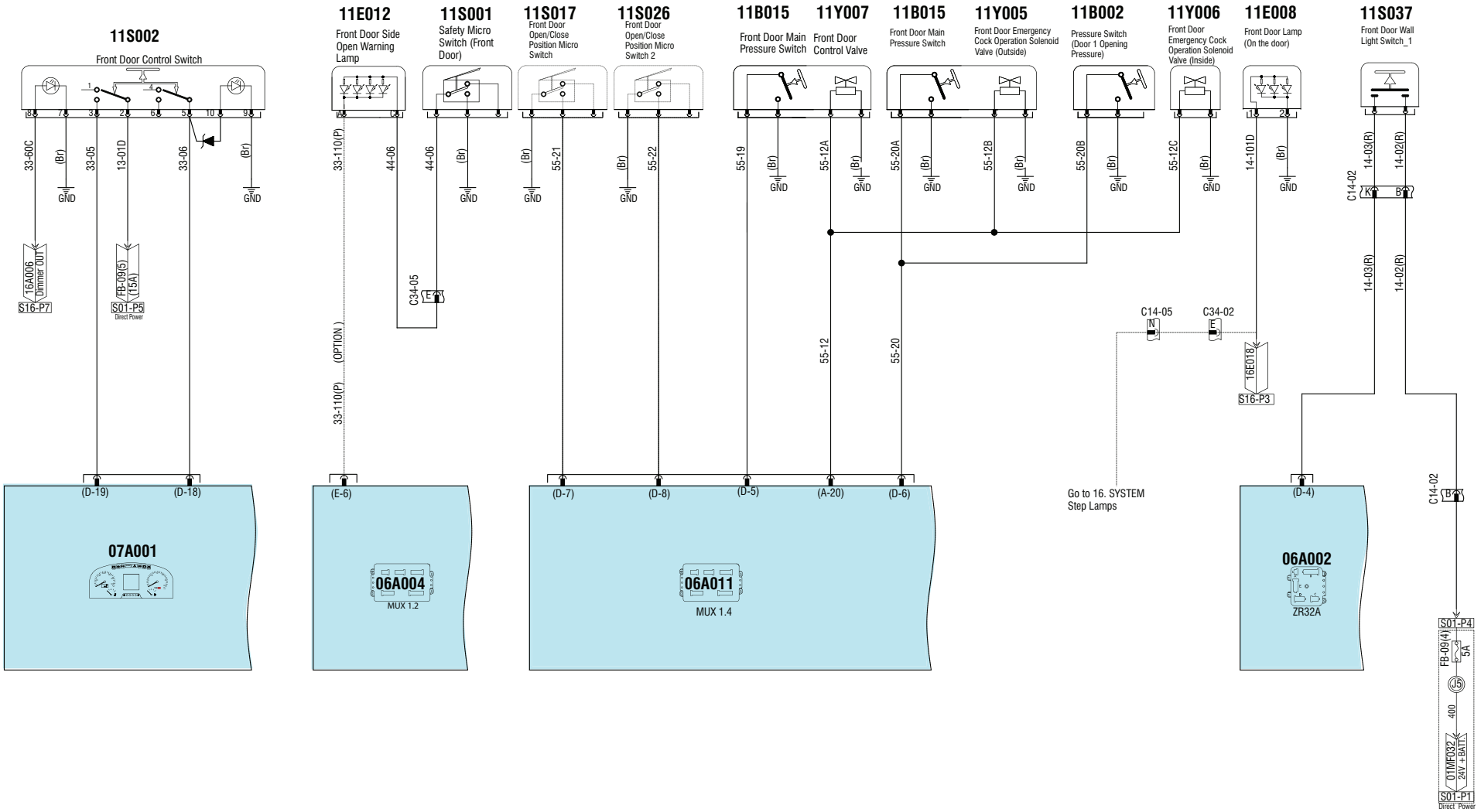

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TS45 Epa13 Wiring

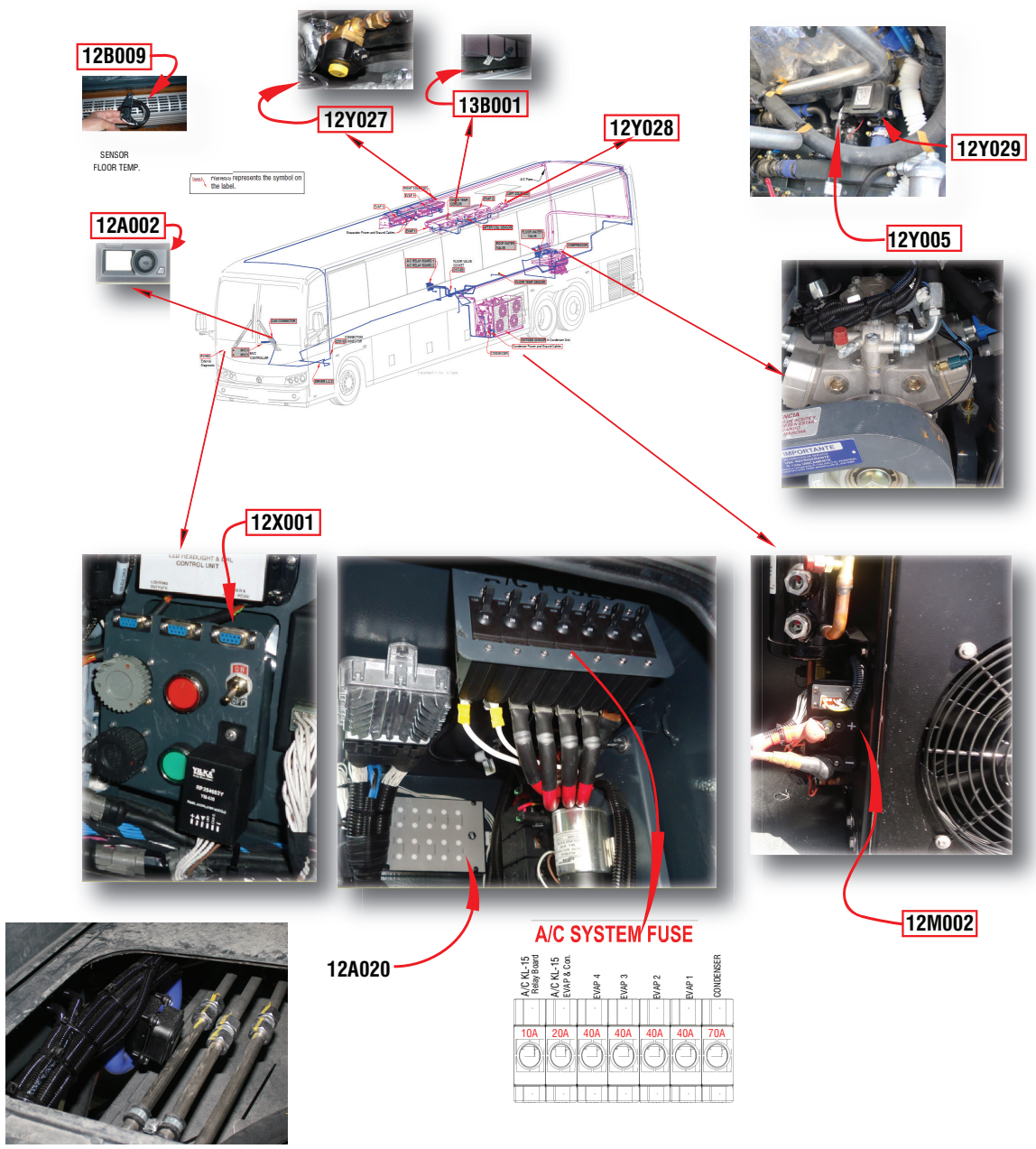
Door Systems | Edition | Sheet S11-P1

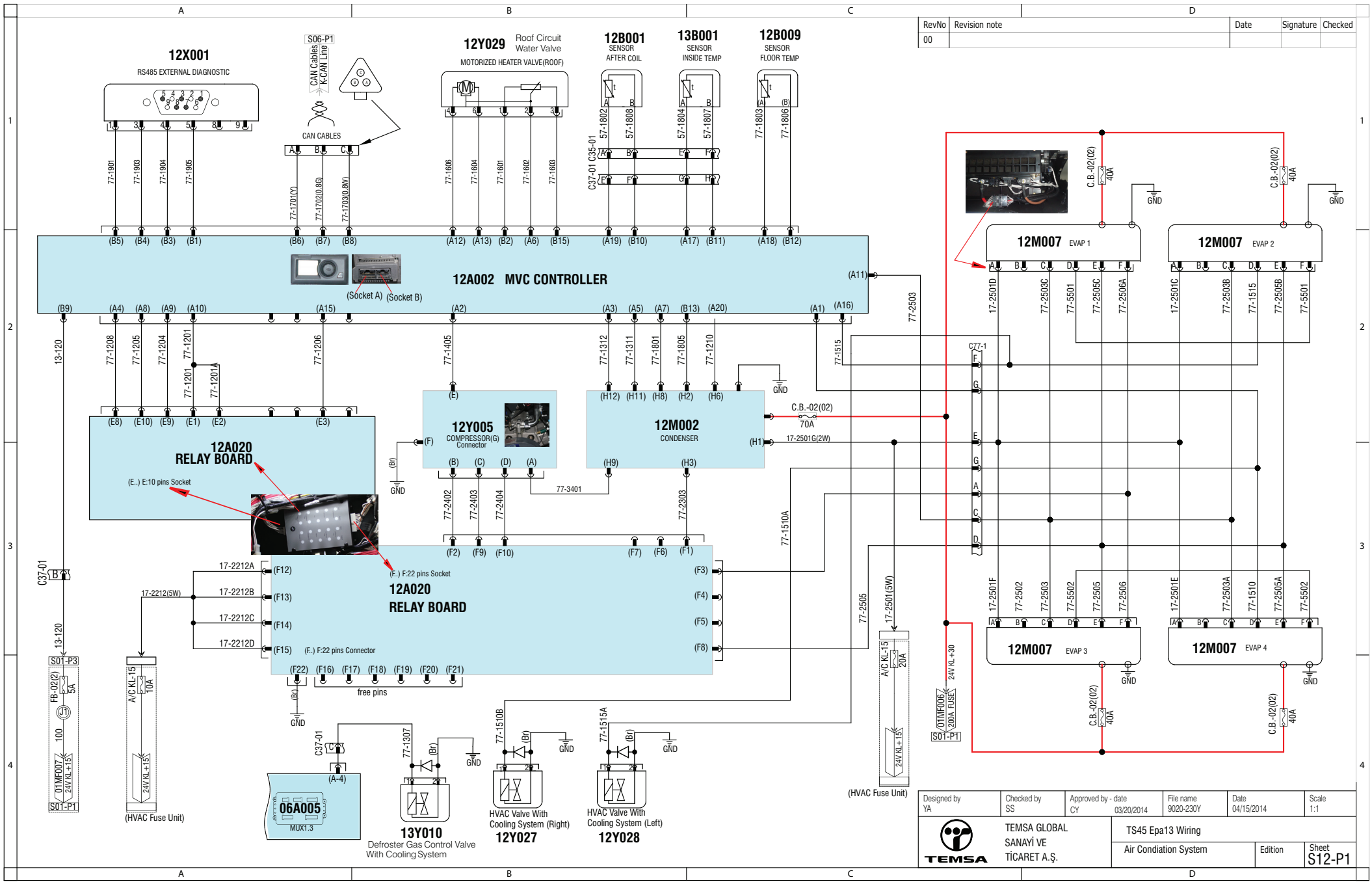
12 AIR CONDITION SYSTEM

Code List & Locations 114
(S12-P1) Air Condiation System Wiring..... 115

Code List & Locations 116
(S12-P2) HVAC Convector Valve and Relays Wiring..... 117

Code	Spanish	Français
12X001	Conector de diagnóstico HVAC RS485	Conector de diagnóstico HVAC RS485
01MF006	Alimentación del Aire Acondi-cionado	Alimentation Du Climatiseur
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
06A005	Multiplexor 1,3	Mux 1.3
12A002	Unidad de Control del Clima-tizador	Unite De Commande Hvac
12B001	Sensor de Protección Anti-Hielo 1	Capteur 1 Protection Anti-Givre
12B009	Sensor de Temperatura del Con-vector (Posterior)	Capteur Température Chauffage De La Cabine Voit. Ar
12M002	Motor del Calefactor del Con-densador	Moteur Soufflante Du Condenseur
12M007	Evaporador	Evaporateur
12M007	Evaporador	Evaporateur
12M007	Evaporador	Evaporateur
12Y005	Compresor del Climatizador	Compresseur Hvac
12Y027		
12Y028		
12Y029	Válvula de Agua del Circuito de Techo	Soupape Du Circuit A Eau Du Toit
12A020		
13B001	Sensor de Temperatura Interior de Control del Precalentador	Controle De Prechauffage A L'Interieur Du Capteur De Temperature
13Y010	Válvula de control del gas del desempañador con sistema de refrigeración	Soupape de commande du gaz pour dé-givreur avec système de refroidissement




12X001
RS485 EXTERNAL DIAGNOSTIC
S06-P1
CAN Cables
K-CAN Line
CAN CABLES
12Y029
Roof Circuit Water Valve
MOTORIZED HEATER VALVE(ROOF)
12B001
SENSOR AFTER COIL
13B001
SENSOR INSIDE TEMP
12B009
SENSOR FLOOR TEMP
12A002 MVC CONTROLLER
(Socket A)
(Socket B)
12A020
RELAY BOARD
(E..) E:10 pins Socket
12Y005
COMPRESSOR(G) Connector
12M002
CONDENSER
12A020
RELAY BOARD
(F..) F:22 pins Socket
(F..) F:22 pins Connector
free pins
06A005
MUX1.3
13Y010
Defroster Gas Control Valve With Cooling System
HVAC Valve With Cooling System (Right)
12Y027
HVAC Valve With Cooling System (Left)
12Y028
(HVAC Fuse Unit)
12M007 EVAP 1
12M007 EVAP 2
12M007 EVAP 3
12M007 EVAP 4
C.B.-02(02) 40A
C.B.-02(02) 70A
GND
RevNo
Revision note
Date
Signature
Checked
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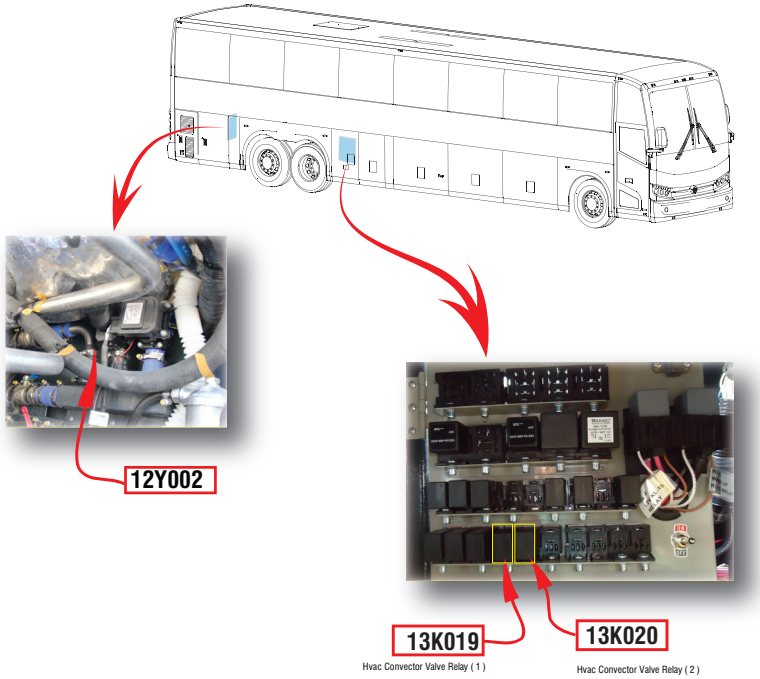
Designed by YA
Checked by SS
Approved by - date CY 03/20/2014
File name 9020-230Y
Date 04/15/2014
Scale 1:1
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
Air Condiation System
Edition
Sheet S12-P1

Code	Spanish	Français
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
06A001	Multiplexor 1.1	Mux 1.1
12Y002	Válvula de Agua del Suelo (We-basto)	Valve D'Eau Plancher Ga
13A008	Unidad del Temporizador del Precalentador	Unite De Minuterie Du Prechauffeur
13K012	Relé de la Bomba de Agua del Circuito Central	Relais Pompe À Eau Circuit Central
13K019	Relé de la Válvula del Convector del Climatizador (1)	Relais De Soupape Du Convecteur Hvac (1)
13K020	Relé de la Válvula del Convector del Climatizador (2)	Relais De Soupape Du Convecteur Hvac (2)



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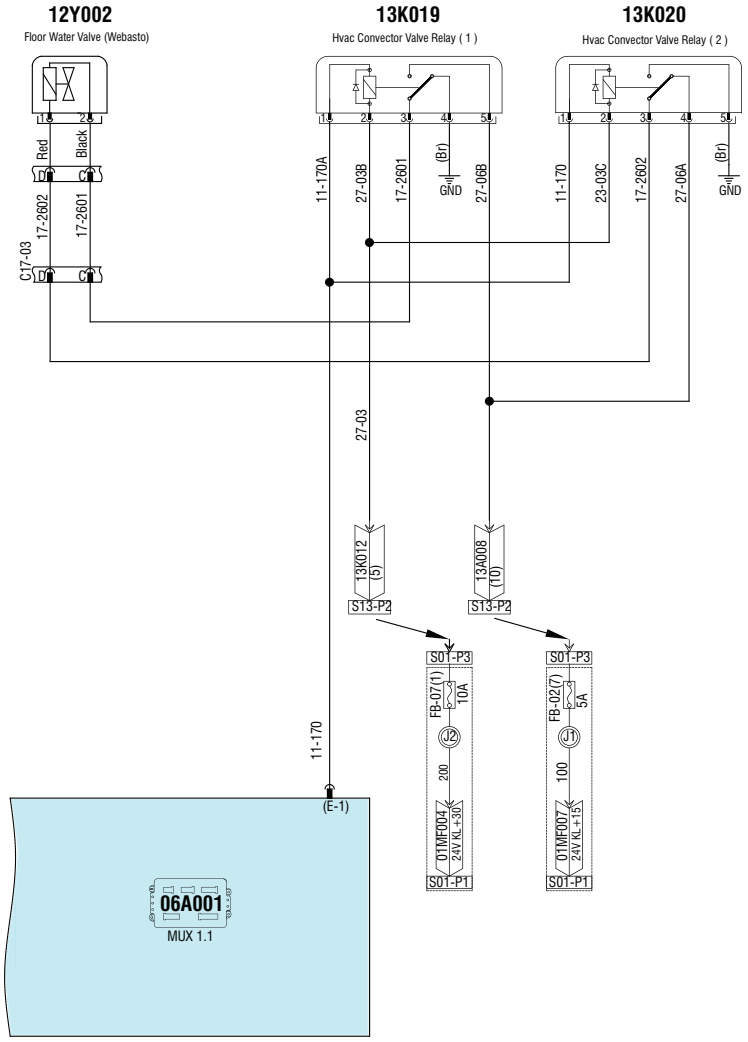

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TS45 Epa13 Wiring

Air Condiation System
(Hvac Convector Valve and Relays)

Edition

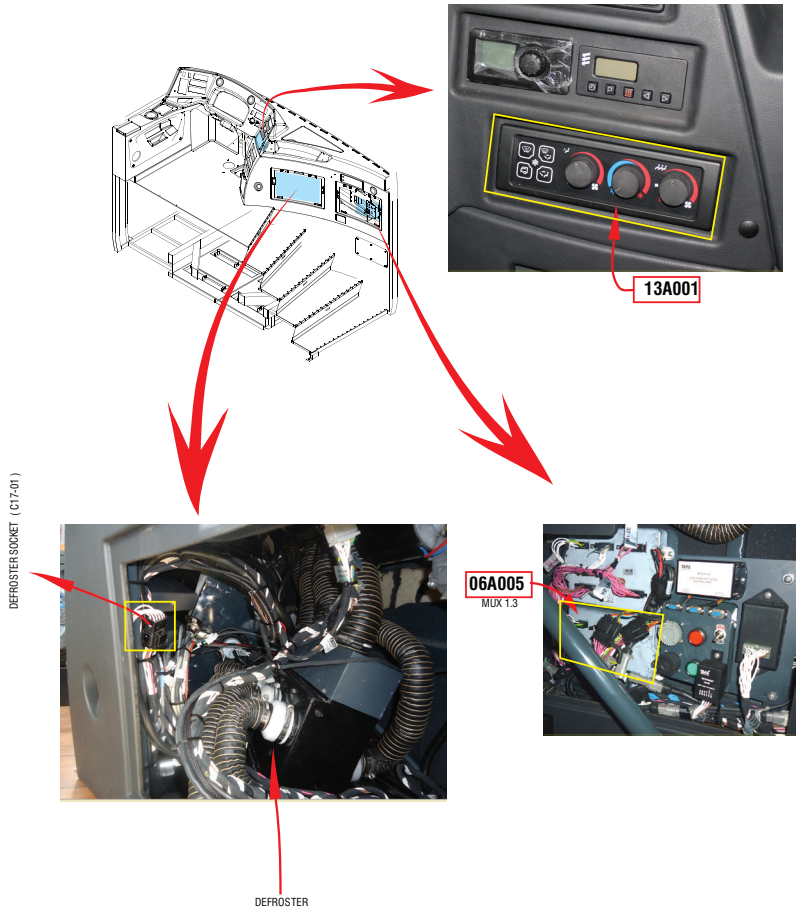
Sheet S12-P2

13 HEATING AND VENTILATION SYSTEMS

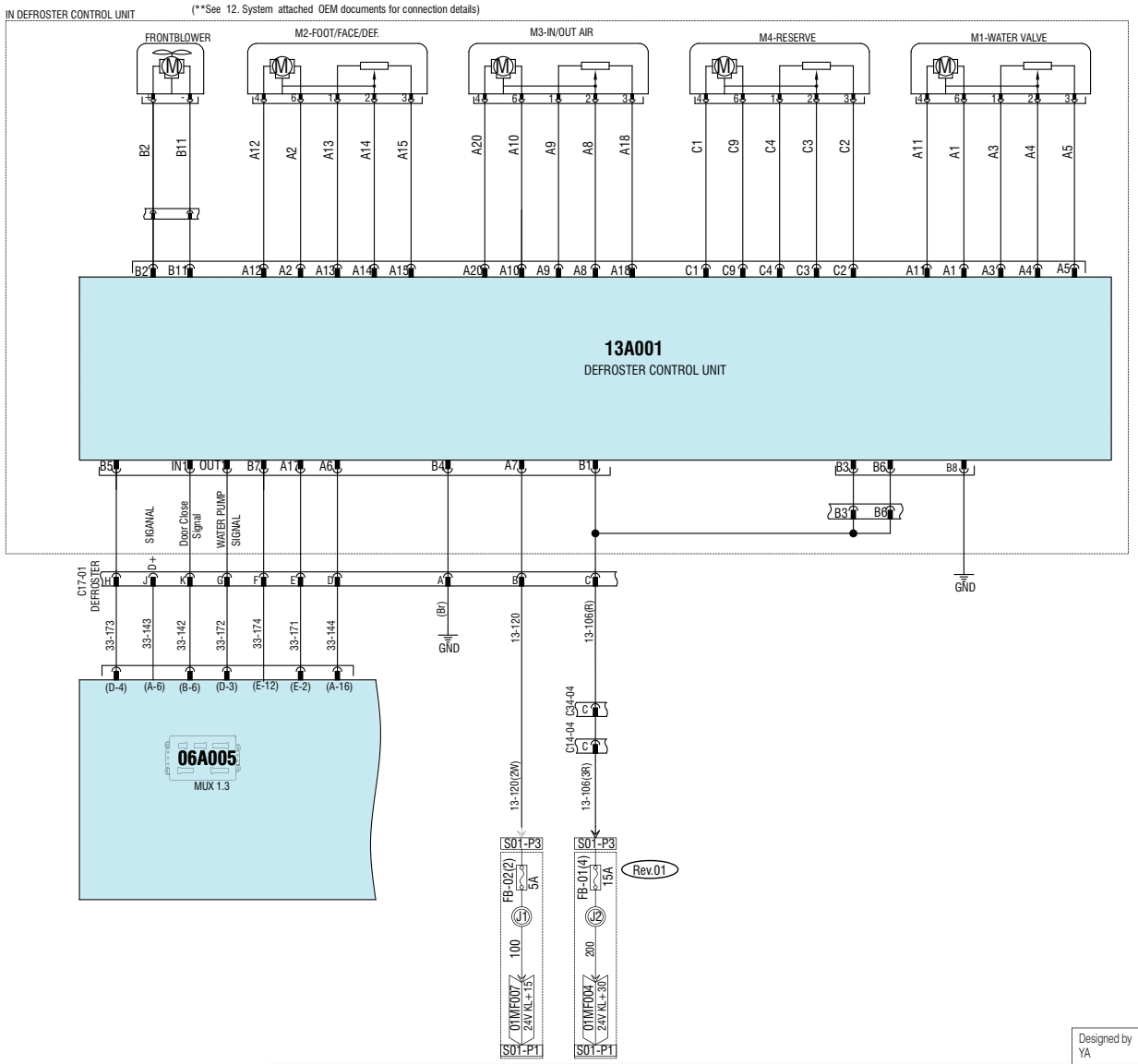
Code List & Locations 120
(S13-P1) Defroster 121

Code List & Locations 122
(S13-P2) HVAC Convector Valve and Relays Wiring..... 123

Code	Spanish	Français
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
06A005	Multiplexor 1,3	Mux 1.3
13A001	Unidad de Control del Desempañador del Climatizador	Unite De Commande Du Systeme De Degivrage Hvac



RevNo	Revision note	Date	Signature	Checked
Rev.01	With FB-06(3) FB-01(4) has changed.	21 June 2014	DN	YA



Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
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4) Refer to page 00.3.6 in general information section for the locations of connectors

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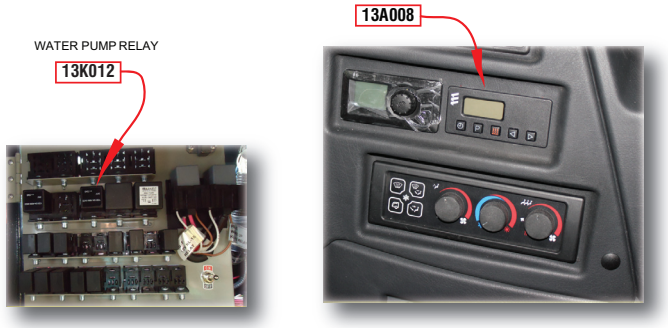
TS45 Epa13 Wiring

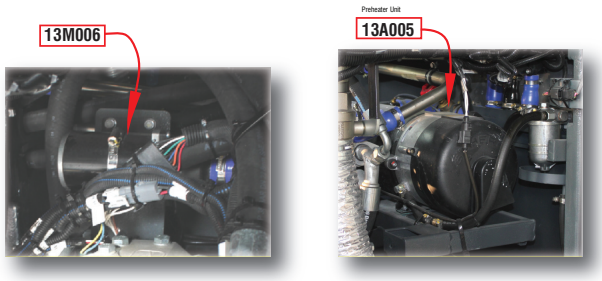
Heating and Ventilation Systems (Defroster)

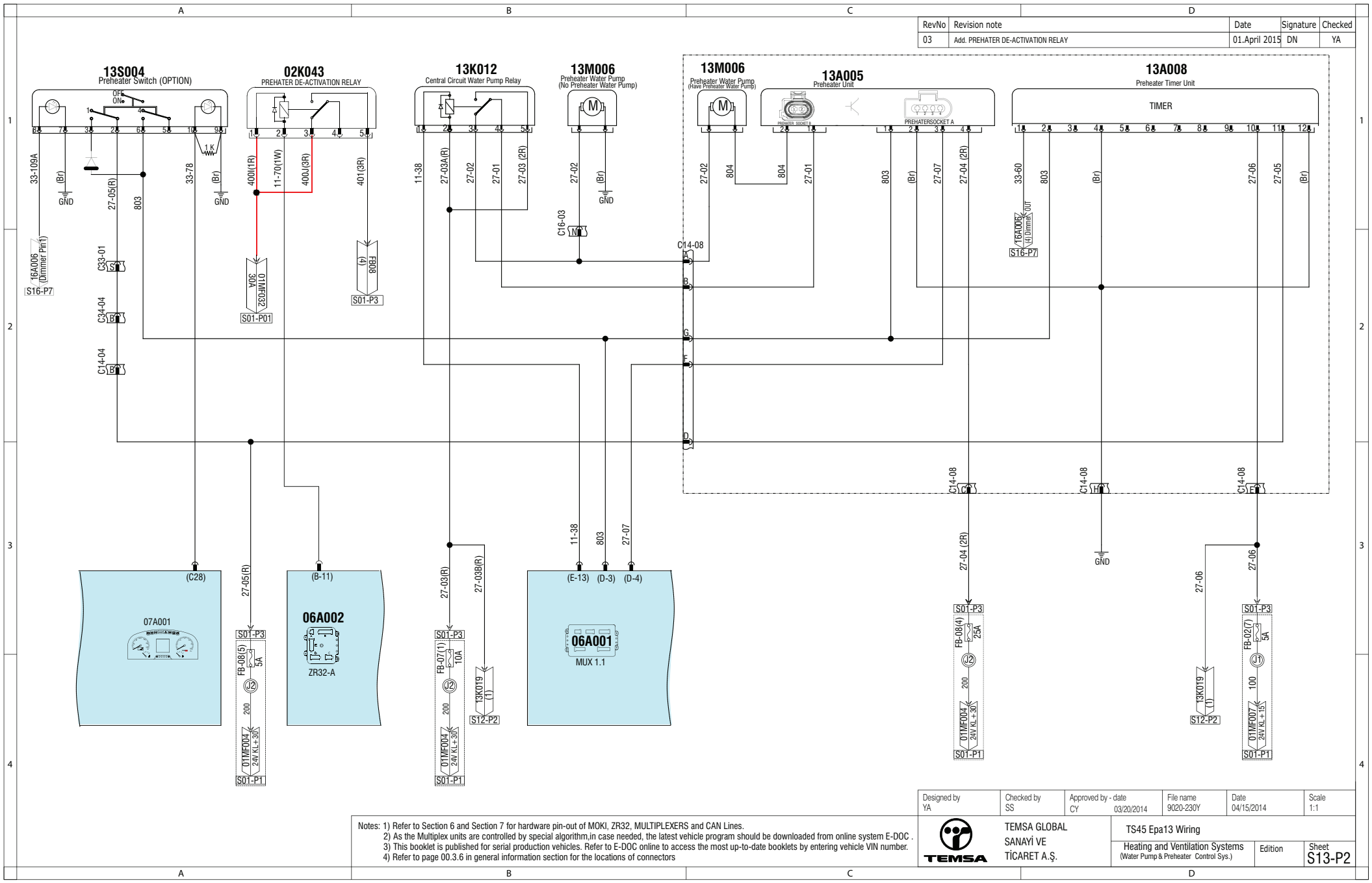
Edition

Sheet S13-P1

Code	Spanish	Français
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
06A001	Multiplexor 1.1	Mux 1.1
07A001	Grupo de Instrumentos	Combiné D'Instruments
13A005	Unidad de Precalentador	Unite Du Prechauffeur
13A008	Unidad del Temporizador del Precalentador	Unite De Minuterie Du Prechauffeur
13K012	Relé de la Bomba de Agua del Circuito Central	Relais Pompe À Eau Circuit Central
13K019	Relé de la Válvula del Convector del Climatizador (1)	Relais De Soupape Du Convecteur Hvac (1)
13M006	Bomba de Agua del Precalen-tador	Pompe A Eau Du Prechauffeur
13S004	Interruptor de Precalentador	Contacteur Du Prechauffeur
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur







RevNo	Revision note	Date	Signature	Checked
03	Add. PREHATER DE-ACTIVATION RELAY	01.April 2015	DN	YA

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YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Heating and Ventilation Systems (Water Pump & Preheater Control Sys.)

Edition

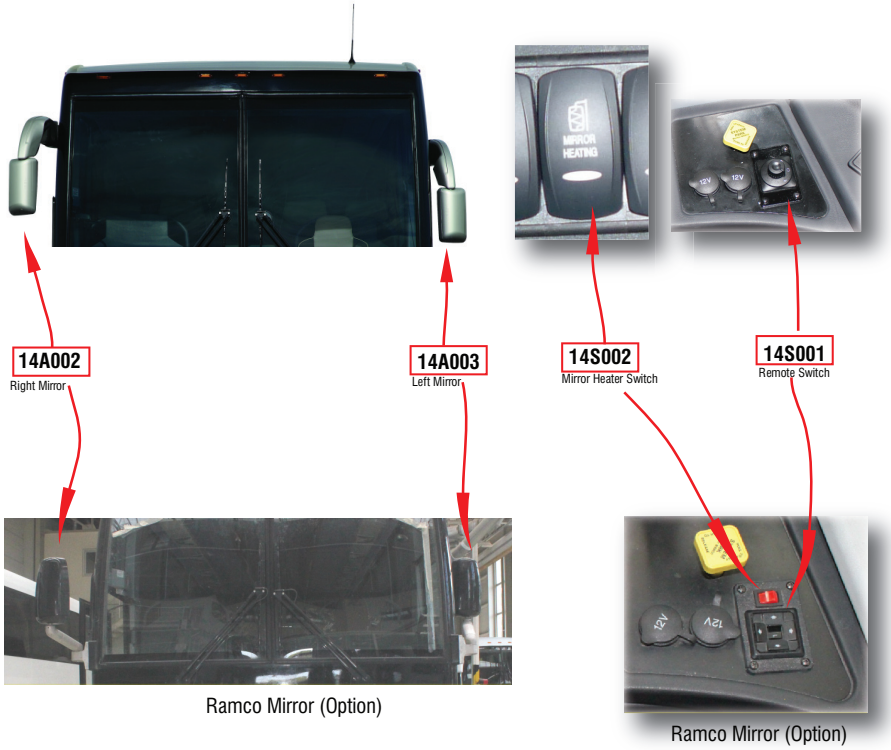
Sheet S13-P2

14 WINDOW AND MIRROR SYSTEMS

Code List & Locations 126
(S14-P1) Mirror Control & Mirror Heater Switch Wiring 127

Code List & Locations 128
(S14-P2) Side Sun Visor System Wiring..... 129

Code	Spanish	Français
01K016	Relé Kl15 de 12V	Relais 12V Kl15
01MF007	Alimentación del Panel de Relés Kl15	Alimentation Du Panneau Des Relais Kl15
06A005	Multiplexor 1,3	Mux 1.3
07A001	Grupo de Instrumentos	Combiné D'Instruments
14A002	Espejo Derecho	Système De Rétroviseurs Extérieurs Droit
14A003	Espejo Izquierdo	Système De Rétroviseurs Extérieurs Gauche
14S001	Interruptor de Ajuste de Espejos	Contacteur Réglage Du Rétroviseur
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur



Ramco Mirror (Option)

Ramco Mirror (Option)

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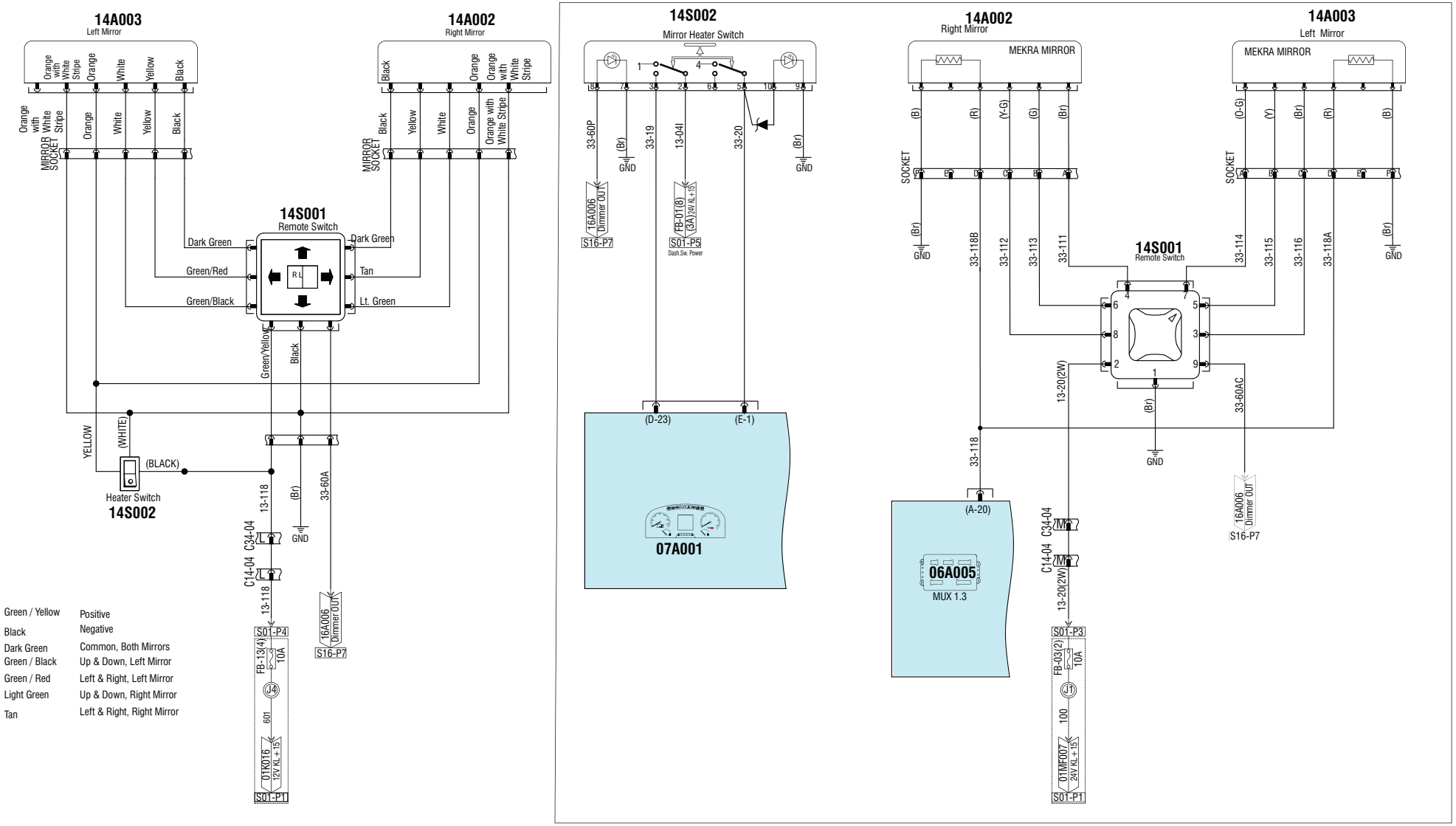
OPTION: MEKRA MIRROR



Green / Yellow	Positive
Black	Negative
Dark Green	Common, Both Mirrors
Green / Black	Up & Down, Left Mirror
Green / Red	Left & Right, Left Mirror
Light Green	Up & Down, Right Mirror
Tan	Left & Right, Right Mirror

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
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4) Refer to page 00.3.6 in general information section for the locations of connectors

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TS45 Epa13 Wiring

Mirror & Mirror Heater Switch

Edition

Sheet S14-P1

Code	Spanish	Français
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
14M001	Motor de Visera Parasol del Conductor	Moteur Du Pare-Soleil Cote Conducteur
14M002	Motor de Visera Parasol de Pasajeros	Moteur Du Pare-Soleil Cote Passager
14S005	Interruptor de Luneta Térmica de Ventana del Conductor	Contacteur Chauffage De Vitre Du Conducteur
14S006	Interruptor de Visera Parasol de Pasajeros	Contacteur Du Pare-Soleil Cote Passager
14S007	Interruptor de Visera Parasol del Conductor	Contacteur Du Pare-Soleil Cote Con-ducteur
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur





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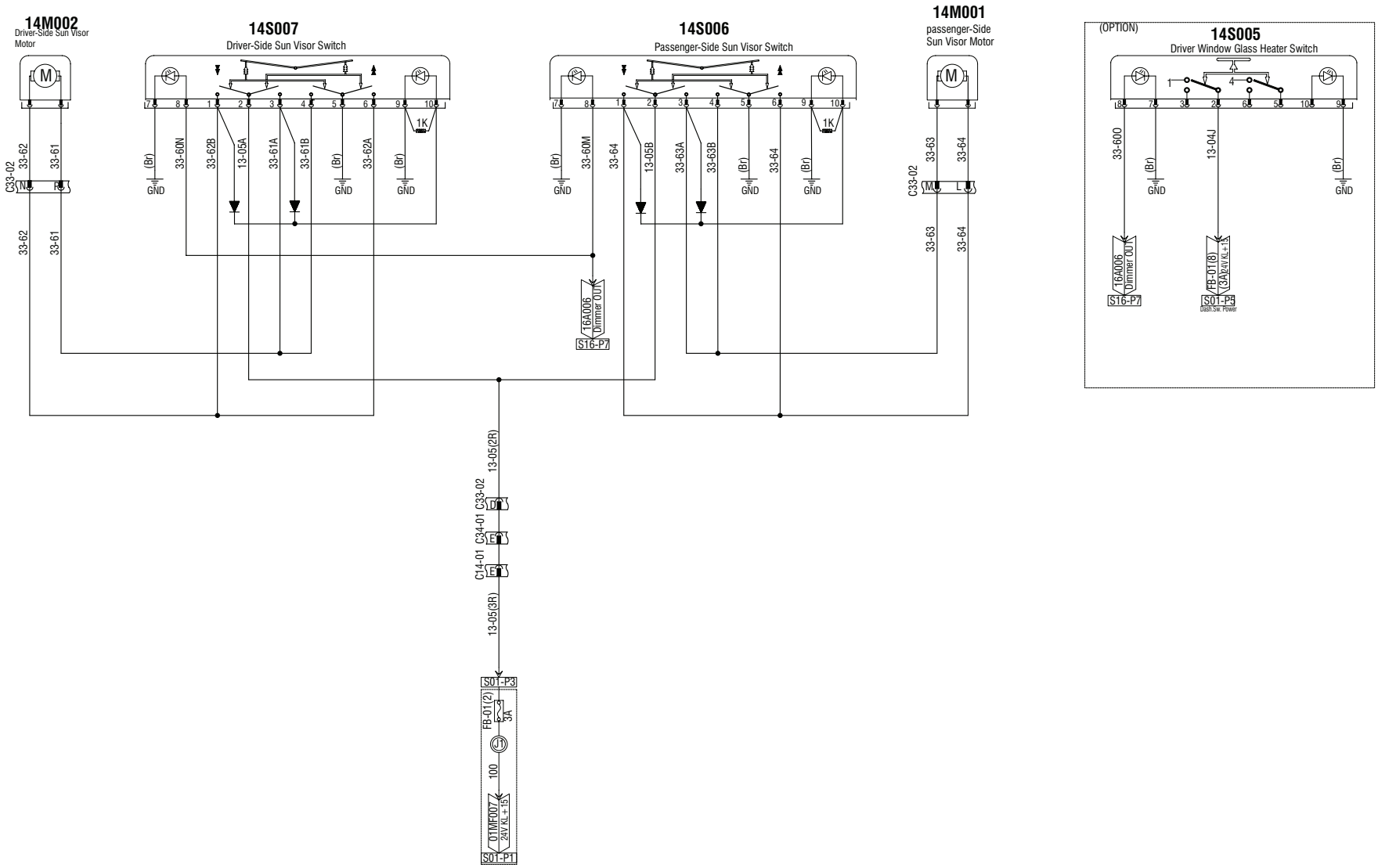

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TS45 Epa13 Wiring

Side Sun Visor System

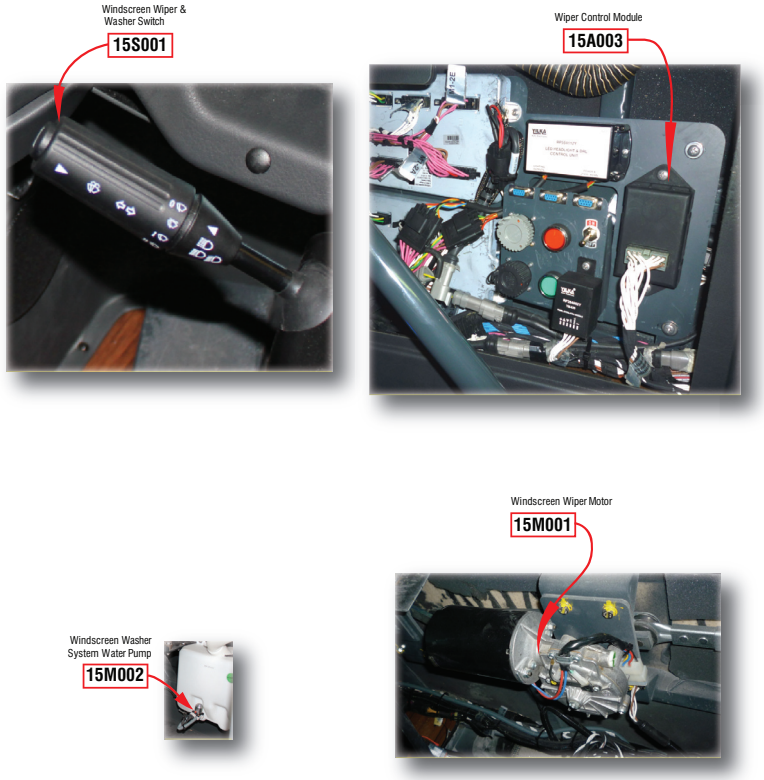
Edition

Sheet S14-P2

15 WIPER AND WASHER SYSTEMS

Code List & Locations 132
(S15-P1) Wiper and Washer Systems 133

Code	Spanish	Français
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
06A005	Multiplexor 1,3	Mux 1.3
07A001	Grupo de Instrumentos	Combiné D'Instruments
15A003	Módulo de Control del Limpi-aparabrisas (YILKA)	Module De Commande d'essuie-glace (YILKA)
15M001	Motor del Limpiaparabrisas	Moteur Essuie-Glace
15M002	Bomba de Agua del Sistema Limpiaparabrisas	Pompe Lave-Glace
15S001	Interruptor del Limpiaparabrisas y de los Limpias	Contacteur D'Essuie-Glaces Et De Lave-Glaces



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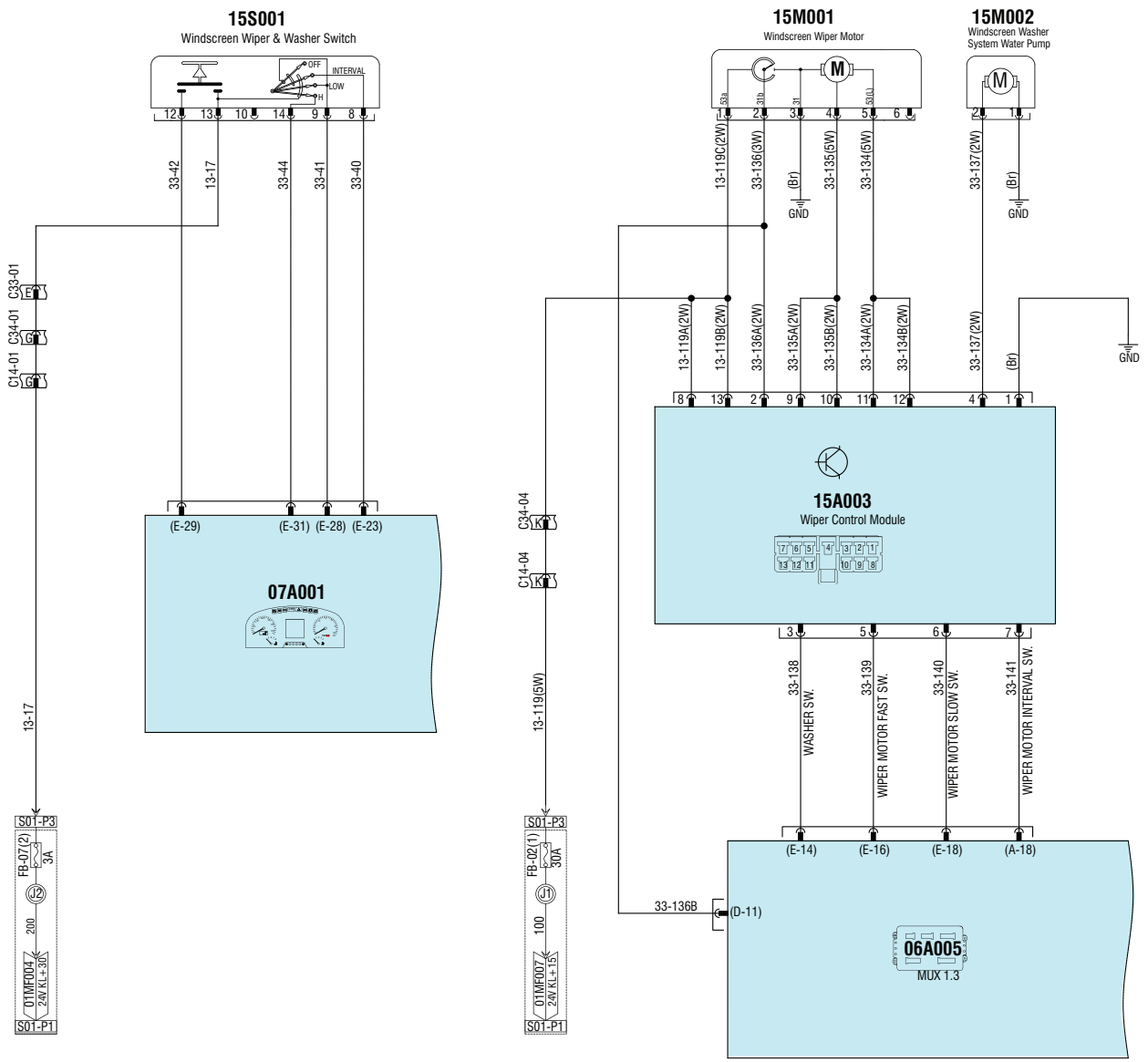

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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4) Refer to page 00.3.6 in general information section for the locations of connectors

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TS45 Epa13 Wiring
Wiper and Washer Systems
Edition
Sheet S15-P1

16 LIGHTING SYSTEM

Code List & Locations 136
(S16-P1) Exterior Lights Wiring 137

Code List & Locations 138
(S16-P2) Exterior Lights Wiring 139

Code List & Locations 140
(S16-P3) Turn Signal Lamps Wiring.....141

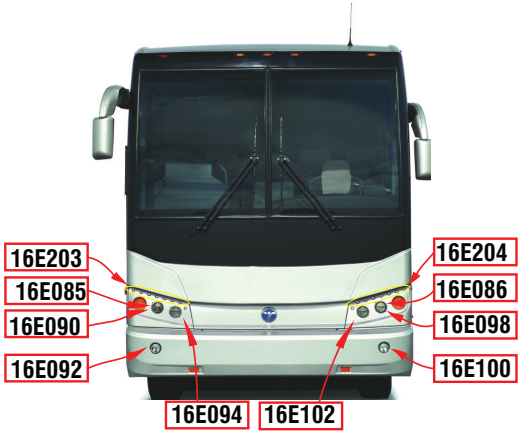
Code List & Locations 142
(S16-P4) Luggage Compartment Illumination Lamps..... 143

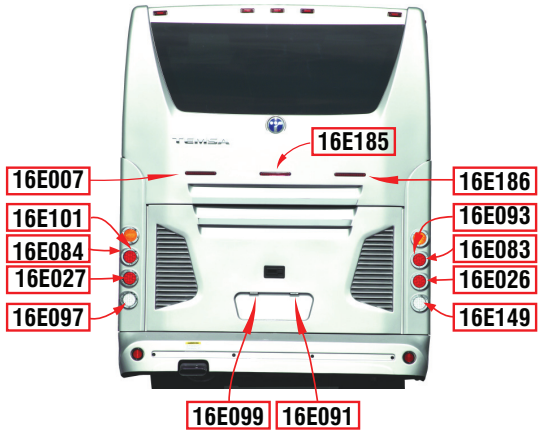
Code List & Locations 144
(S16-P5) Aisle & Step Illumination Lamps..... 145

Code List & Locations 146
(S16-P6) Interior Lighting System..... 147

Code List & Locations 148
(S16-P7) Indicator Lights Brightness Adjuster.....149

Code	Spanish	Français
06A001	Multiplexor 1.1	Mux 1.1
06A003	Multiplexor 2,1	Mux 2.1
06A004	Multiplexor 1,2	Mux 1.2
08K005	Relé de Luz de Parada	Relais Du Feu D'Arrêt
16E007	Luz de Freno Central Trasera	Feu De Stop Milieu Arrière
16E026	Luz de Freno, Derecha	Feu D'Arret, Droit
16E027	Luz de Freno Izquierda	Feu D'Arret, Gauche
16E084	Luz Trasera de Estacionamiento, Izquierda	Feu De Stationnement Arriere, Gauche
16E086	Luz Delantera de Estacionamiento, Izquierda	Feu De Stationnement Avant, Gauche
16E090	Faro Derecho (Corto Alcance)	Feu De Croisement, Droit
16E091	Luces de Matrícula, Derecha	Lampe De Plaque D'Immatriculation, Droit
16E092	Faro Antiniebla Delantero Derecho	Feu Antibrouillard Avant, Droit
16E093	Luz de Freno, Derecha	Feu D'Arret, Droit
16E094	Faro Derecho (Largo Alcance)	Feu De Route, Droit
16E097	Luz de Marcha Atrás, Izquierda	Feu De Recul, Gauche
16E098	Faro Izquierdo (Corto Alcance)	Feu De Croisement, Gauche
16E099	Luces de Matrícula, Izquierda	Lampe De Plaque D'Immatriculation, Gauche
16E100	Faro Antiniebla Delantero, Izquierda	Feu Antibrouillard Avant, Gauche
16E101	Luz de Freno Izquierda	Feu D'Arret, Gauche
16E102	Faro Izquierdo (Largo Alcance)	Feu De Route, Gauche
16E110	Luz Lateral de Posición 4 (Derecha)	Feu De Gabarit 4 (Droit)
16E116	Luz Lateral de Posición 4 (Izquierda)	Feu De Gabarit 4 (Gauche)
16E119	Luz Lateral de Posición (Izquierda)	Feu De Gabarit (Gauche)
16E141	Luz Lateral de Posición (Derecha)	Feu De Gabarit (Droit)
16E149	Luz de Marcha Atrás, Derecha	Feu De Recul, Droit
16E181	Luz de Marcha Atrás, Lateral Delantero Derecho	Feu De Recul, Avant Droit
16E182	Luz de Marcha Atrás, Lateral Delantero Izquierdo	Feu De Recul, Avant Gauche
16E183	Luz de Marcha Atrás, Lateral Trasero Derecho	Feu De Recul, Arriere Droit
16E184	Luz de Marcha Atrás, Lateral Trasero Izquierdo	Feu De Recul, Arriere Gauche
16E185	Luz de Freno Trasera Central 2	Feu De Stop Milieu Arrière
16E186	Luz de Freno Trasera Central 3	Feu De Stop Milieu Arrière
16E203	Faro de luz diurna delantero izquierdo	Phare de jour avant gauche
16E204	Faro de luz diurna delantero derecho	Phare de jour avant droit









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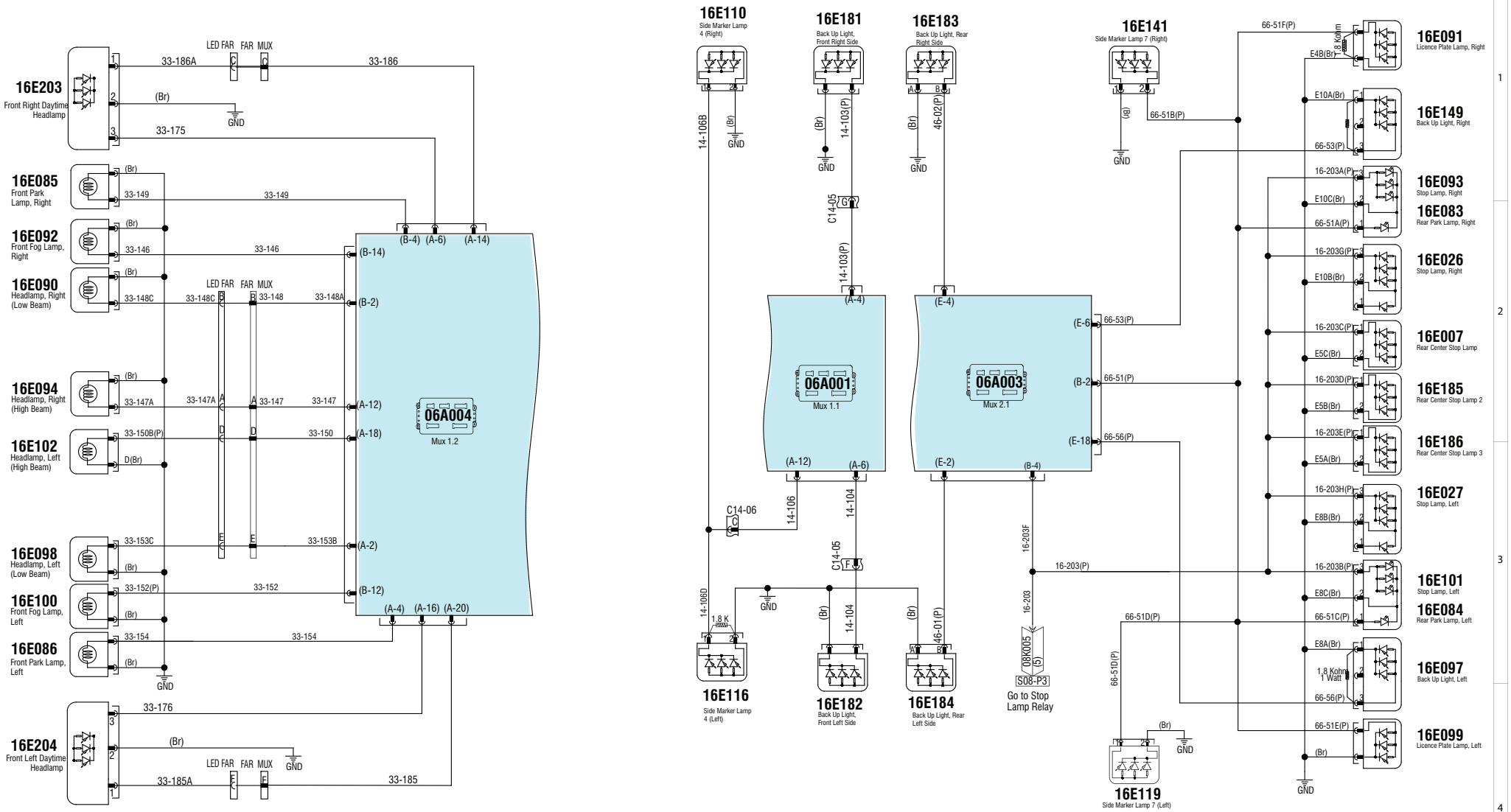

TEMSA NOTE:In case of malfunction of 16A007, the connector on 16A007 will be removed and connected to FAR MUX labeled connector. Thus, LED lights will be controlled by Multiplex System.

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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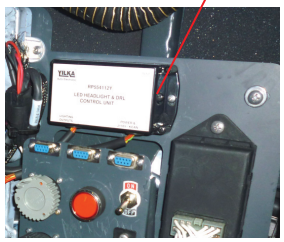
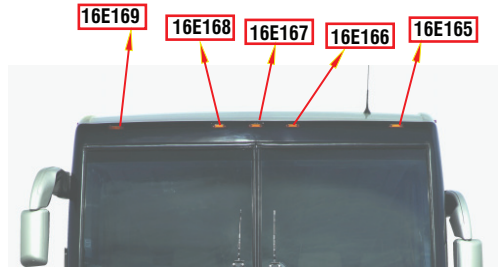
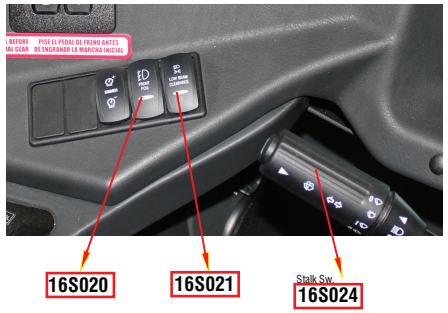
TS45 Epa13 Wiring

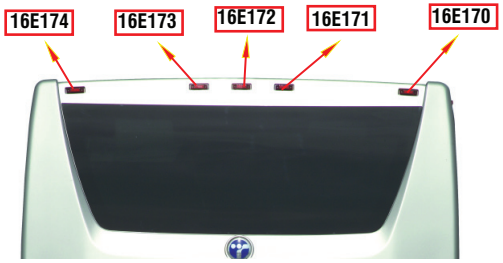
Lights System (Exterior Lights) | Edition | Sheet S16-P1

Code	Spanish	Français
01K016	Relé Kl15 de 12V	Relais 12V Kl15
06A002	Zr32-E	Zr32-E
06A011	Multiplexor 1,4	Mux 1.4
07A001	Grupo de Instrumentos	Combiné D'Instruments
16E090	Faro Derecho (Corto Alcance)	Feu De Croisement, Droit
16E094	Faro Derecho (Largo Alcance)	Feu De Route, Droit
16E098	Faro Izquierdo (Corto Alcance)	Feu De Croisement, Gauche
16E102	Faro Izquierdo (Largo Alcance)	Feu De Route, Gauche
16E107	Luz Lateral de Posición 1 (Derecha)	Feu De Gabarit 1 (Droit)
16E108	Luz Lateral de Posición 2 (Derecha)	Feu De Gabarit 2 (Droit)
16E109	Luz Lateral de Posición 3 (Derecha)	Feu De Gabarit 3 (Droit)
16E113	Luz Lateral de Posición 1 (Izquierda)	Feu De Gabarit 1 (Gauche)
16E114	Luz Lateral de Posición 2 (Izquierda)	Feu De Gabarit 2 (Gauche)
16E115	Luz Lateral de Posición 3 (Izquierda)	Feu De Gabarit 3 (Gauche)
16E165	Luz Delantera de Posición 1	Feu De Gabarit Avant 1
16E166	Luz Delantera de Posición 2	Feu De Gabarit Avant 2
16E167	Luz Delantera de Posición 3	Feu De Gabarit Avant 3
16E168	Luz Delantera de Posición 4	Feu De Gabarit Avant 4
16E169	Luz Delantera de Posición 5	Feu De Gabarit Avant 5
16E170	Luz Trasera de Posición 1	Feu De Gabarit Arriere 1
16E171	Luz Trasera de Posición 2	Feu De Gabarit Arriere 2
16E172	Luz Trasera de Posición 3	Feu De Gabarit Arriere 3
16E173	Luz Trasera de Posición 4	Feu De Gabarit Arriere 4
16E174	Luz Trasera de Posición 5	Feu De Gabarit Arriere 5
16S020	Interruptor de Faros Antiniebla Delanteros	Contacteur Des Feux Antibrouillard Avant
16S021	Interruptor de Luces de Estaciona-miento	Contacteur Feu De Stationnement‹
16S024	Interruptor de Faro (en Interruptor Izquierdo de Columna de Dirección Combinacional)	Contacteur De Phares (Sur Contacteur Combi-natoire De La Colonne De Direction)
16A007	Módulo de faro de luz diurna lado	Calculateur du phare de jour















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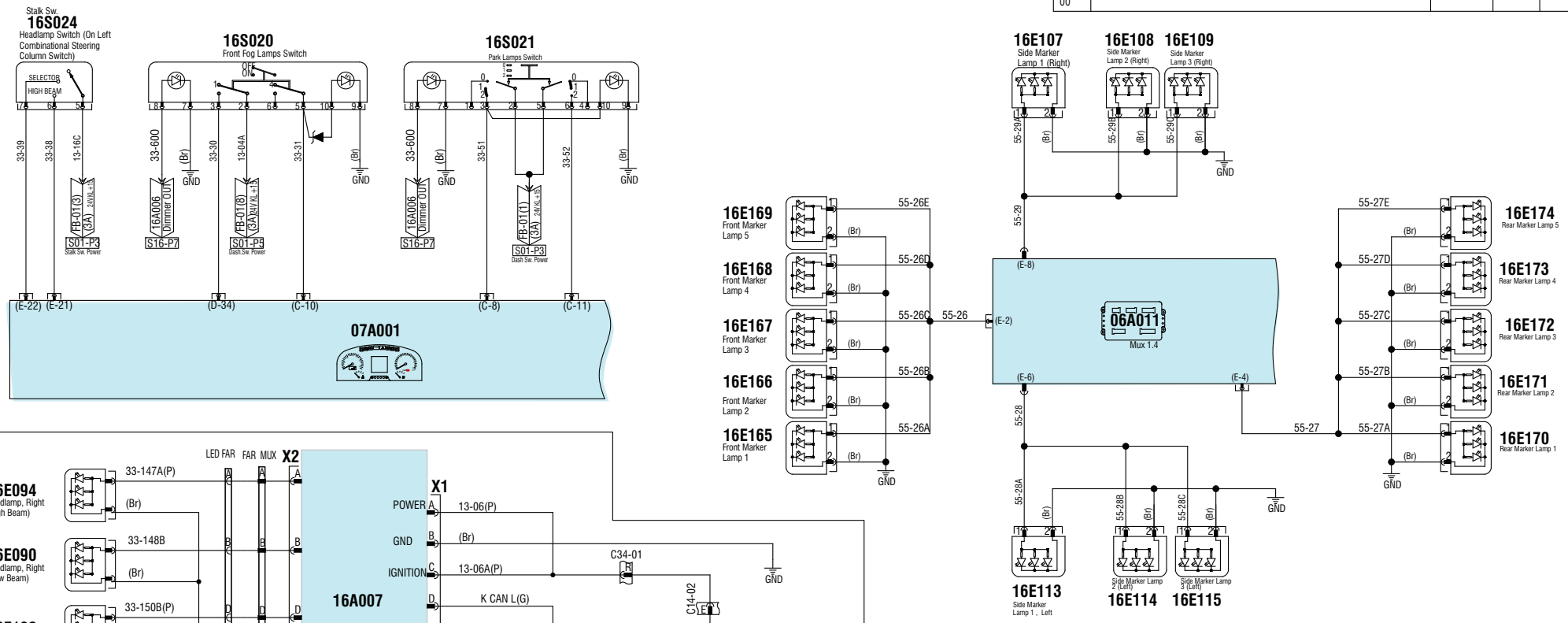

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page " 00.3.6 " in general information section for the locations of connectors

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Lights System (Exterior Lights)

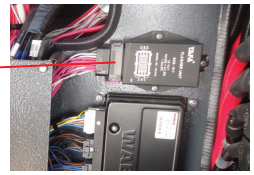
Edition

Sheet S16-P2

Code	Spanish	Français
01MF037	Megafusible (80A)	Fusible méga (80A)
02K021	Relé del Intermitente (Puerta abierta)	Relais clignotant (Portière ouverte)
06A002	Zr32-E	Zr32-E
07A001	Grupo de Instrumentos	Combiné D'Instruments
16E004	Luz de Intermitente Delantero Derecho	Résistance Clignotant Droit
16E005	Luz de Intermitente Trasero Derecho	Résistance Clignotant Droit
16E006	Luz de Intermitente Trasero Izquierdo	Résistance Clignotant Gauche
16E080	Luz de Intermitente Lateral Delantero Derecho	Résistance Clignotant Droit
16E081	Luz de Intermitente Delantero Izquierdo	Résistance Clignotant Gauche
16E082	Luz de Intermitente Lateral Delantero Izquierdo	Résistance Clignotant Gauche
16E175	Luz de Intermitente, Lateral Trasero Derecho	Cloignottant Arriere Droit
16E176	Luz de Intermitente, Lateral Trasero Izquierdo	Cloignottant Arriere Gauche
16S013	Interruptor de Intermitentes (en Interruptor de Columna de Dirección Combinacional)	Contacteur De Clignotant (Sur Contacteur Combinatoire De La Colonne De Direction)







Stalk Sw.

16S013







RevNo	Revision note	Date	Signature	Checked
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Stalk Sw.
16S013
SC-01
13-16C
33-36
33-37
Right Signal
Left Signal
FB-01(3)
(3A)
S01-P3
Stalk Sw. Power
(E-19) (E-20)
07A001
06A002
ZR32A
(E-5) 11-52
(E-7) 11-51
(E-9) 11-50
(C-22) 13-162
(C-21) 13-161
(C-20) 13-160
C33-01
C34-03
C14-03
(C3) Right Signal Warning
(C1) Left Signal Warning
(B2) Hazart Warning
(C8)
(A7) Right Pilot
(A6) Left Pilot
02K021
FLASHER SOCKET
16E004
Turn Signal Lamp, Front Right
16E080
Turn Signal Lamp, Front Right Side
16E175
Turn Signal Lamp, Rear Right Side
16E005
Turn Signal Lamp, Rear Right
13-170(P)
14-107(P)
14-500(P)
146-50(P)
(Br)
GND
C34-01
C14-05
C16-01
C16-03
C14-01
(A2) (A3) (B3) (B4)
(B8) (Br) GND
(B1) 11-200B(P)
(A1) 11-200A(P)
11-200(3P)
(A4) (A5) (B6) (B7)
13-171(P)
14-108(P)
14-501(P)
146-51(P)
S01-P4
FB-10(11)
10A
J6
500
D1MF037
12V + BAT1
S01-P1
Direct Power
16E081
Turn Signal Lamp, Front Left
16E082
Turn Signal Lamp, Front Left Side
16E176
Turn Signal Lamp, Rear Left Side
16E006
Turn Signal Lamp, Rear Left

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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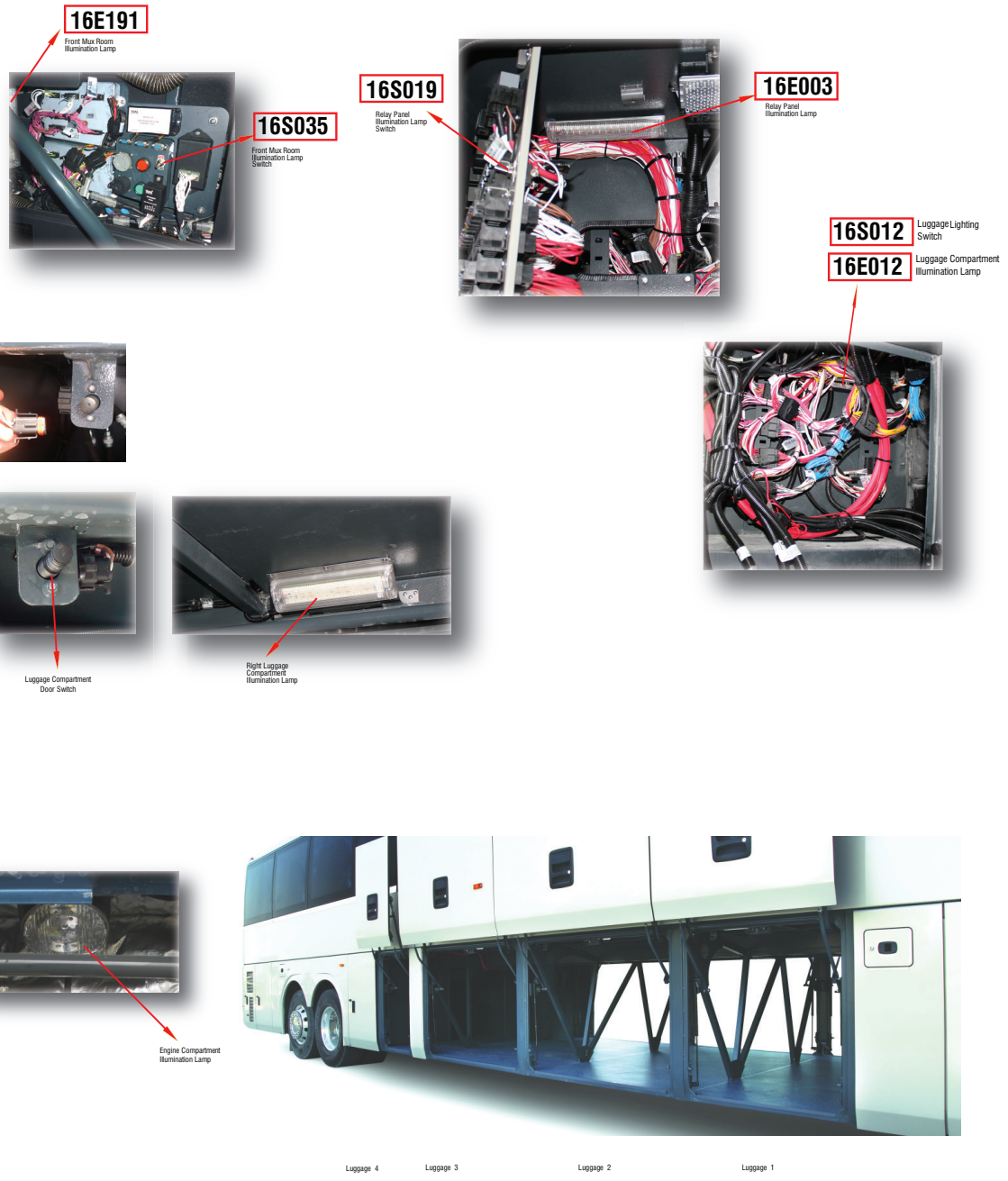
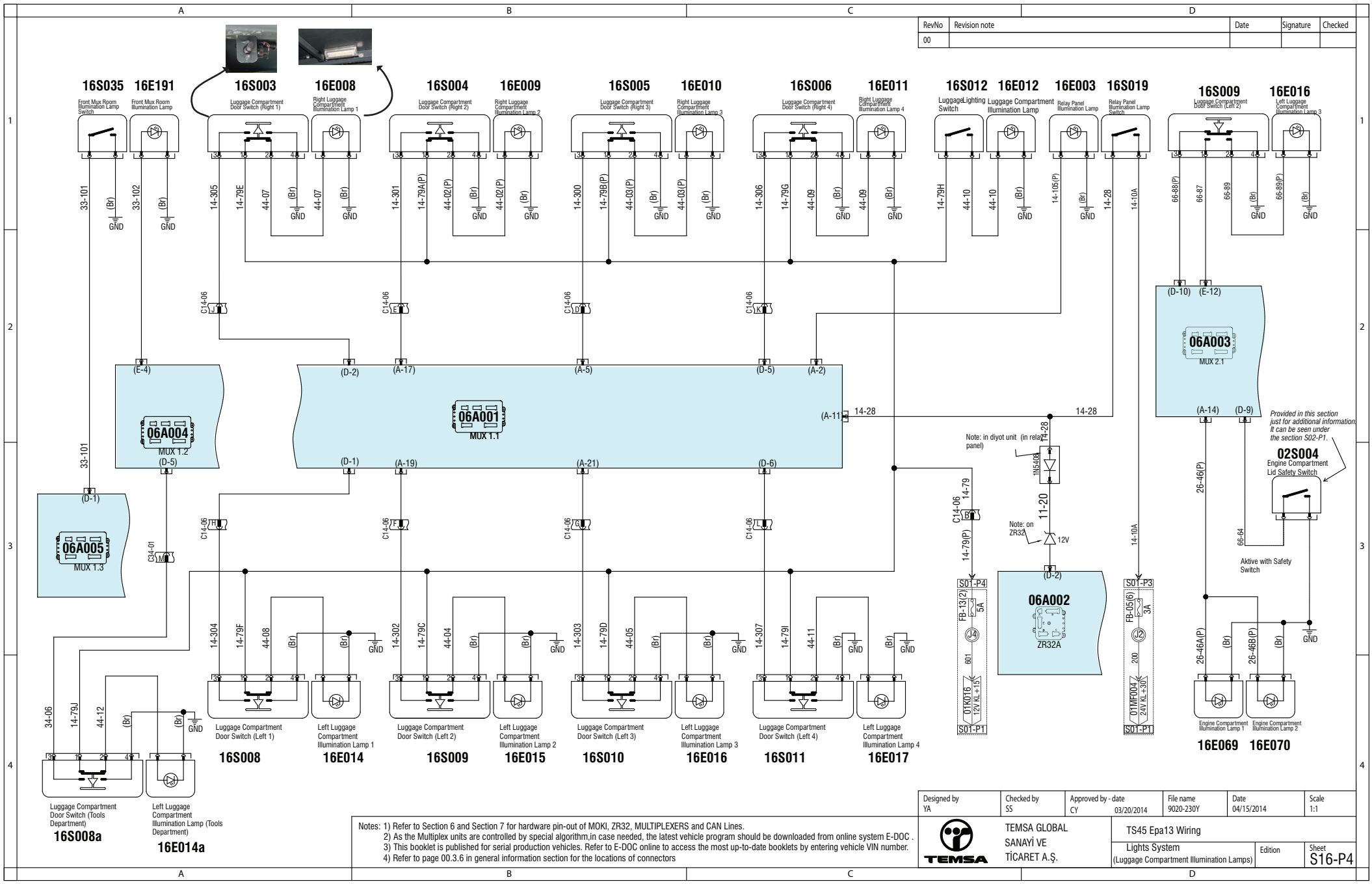
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring
Lights System (Turn Signal Lamps)
Edition
Sheet S16-P3

Code	Spanish	Français
01K016	Relé Kl15 de 12V	Relais 12V Kl15
01MF004	Alimentación del Panel de Relés Kl30	Alimentation Du Panneau Des Relais Kl30
02S004	Interruptor de la puerta de seguridad del Compartimento del Motor	Couvercle du Compartiment Moteur interrupteur de securite
06A001	Multiplexor 1.1	Mux 1.1
06A002	Zr32-E	Zr32-E
06A003	Multiplexor 2,1	Mux 2.1
06A003	Multiplexor 2,1	Mux 2.1
06A004	Multiplexor 1,2	Mux 1.2
06A005	Multiplexor 1,3	Mux 1.3
16E003	Lámpara de Iluminación del Panel de Relés Trasero	Lampe D'Eclairage Du Panneau De Relais Arriere
16E008	Lámpara de Iluminación del Maletero Derecho 1	Lampe D'Eclairage De La Soute A Bagages Droit 1
16E009	Lámpara de Iluminación del Maletero Derecho 2	Lampe D'Eclairage De La Soute A Bagages Droit 2
16E010	Lámpara de Iluminación del Maletero Derecho 3	Lampe D'Eclairage De La Soute A Bagages Droit 3
16E011	Lámpara de Iluminación del Maletero Derecho 4	Lampe D'Eclairage De La Soute A Bagages Droit 4
16E014	Lámpara de Iluminación del Maletero Izquierdo 1	Lampe D'Eclairage De La Soute A Bagages Gauche 1
16E015	Lámpara de Iluminación del Maletero Izquierdo 2	Lampe D'Eclairage De La Soute A Bagages Gauche 2
16E016	Lámpara de Iluminación del Maletero Izquierdo 3	Lampe D'Eclairage De La Soute A Bagages Gauche 3
16E017	Lámpara de Iluminación del Maletero Izquierdo 4	Lampe D'Eclairage De La Soute A Bagages Gauche 4
16E069	Lámpara de Iluminación del Compartimento del Motor 1	Lampe D'Eclairage Du Bloc Moteur 1
16E070	Lámpara de Iluminación del Compartimento del Motor 2	Lampe D'Eclairage Du Bloc Moteur 2
16E191	Lámpara de Iluminación del Compartimento del Motor 3	Lampe D'Eclairage Du Bloc Moteur 3
16S003	Interruptor de Puerta del Maletero (Derecha 1)	Contacteur Porte De Compartiment À Bagages
16S004	Interruptor de Puerta del Maletero (Derecha 2)	Contacteur Porte De Compartiment À Bagages
16S005	Interruptor de Puerta del Maletero (Derecha 3)	Contacteur Porte De Compartiment À Bagages
16S006	Interruptor de Puerta del Maletero (Derecha 4)	Contacteur Porte De Compartiment À Bagages
16S008	Interruptor de Puerta del Maletero (Izquierda 1)	Contacteur Porte De Compartiment À Bagages
16S009	Interruptor de Puerta del Maletero (Izquierda 2)	Contacteur Porte De Compartiment À Bagages
16S009	Interruptor de Puerta del Maletero (Izquierda 2)	Contacteur Porte De Compartiment À Bagages
16S010	Interruptor de Puerta del Maletero (Izquierda 3)	Contacteur Porte De Compartiment À Bagages
16S011	Interruptor de Puerta del Maletero (Izquierda 4)	Contacteur Porte De Compartiment À Bagages
16S019	Interruptor de Lámparas de Iluminación del Panel de Relés Delantero	Contacteur De La Lampe D'Eclairage Du Panneau De Relais Avant
16S023	Interruptor de Iluminación de Cabina Dormitorio	Contacteur D'Eclairage De La Cabine De Couchage
16S035	Interruptor de la luz de la caja eléctrica del tablero	Interruptor de la luz de la caja eléctrica del tablero




RevNo | Revision note | Date | Signature | Checked
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16S035 Front Mux Room Illumination Lamp Switch
16E191 Front Mux Room Illumination Lamp
16S003 Luggage Compartment Door Switch (Right 1)
16E008 Right Luggage Compartment Illumination Lamp 1
16S004 Luggage Compartment Door Switch (Right 2)
16E009 Right Luggage Compartment Illumination Lamp 2
16S005 Luggage Compartment Door Switch (Right 3)
16E010 Right Luggage Compartment Illumination Lamp 3
16S006 Luggage Compartment Door Switch (Right 4)
16E011 Right Luggage Compartment Illumination Lamp 4
16S012 Luggage Lighting Switch
16E012 Luggage Compartment Illumination Lamp
16E003 Relay Panel Illumination Lamp
16S019 Relay Panel Illumination Lamp Switch
16S009 Luggage Compartment Door Switch (Left 2)
16E016 Left Luggage Compartment Illumination Lamp 3
06A004 MUX 1.2
06A001 MUX 1.1
06A003 MUX 2.1
06A005 MUX 1.3
06A002 ZR32A
02S004 Engine Compartment Lid Safety Switch
Note: in diyot unit (in relay panel)
Note: on ZR32
12V
Provided in this section just for additional information. It can be seen under the section S02-P1.
Aktive with Safety Switch
16S008 Luggage Compartment Door Switch (Left 1)
16E014 Left Luggage Compartment Illumination Lamp 1
16S010 Luggage Compartment Door Switch (Left 3)
16E015 Left Luggage Compartment Illumination Lamp 2
16S011 Luggage Compartment Door Switch (Left 4)
16E016 Left Luggage Compartment Illumination Lamp 3
16E017 Left Luggage Compartment Illumination Lamp 4
16S008a Luggage Compartment Door Switch (Tools Department)
16E014a Left Luggage Compartment Illumination Lamp (Tools Department)
16E069 Engine Compartment Illumination Lamp 1
16E070 Engine Compartment Illumination Lamp 2
Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors
Designed by YA | Checked by SS | Approved by - date CY 03/20/2014 | File name 9020-230Y | Date 04/15/2014 | Scale 1:1
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.
TS45 Epa13 Wiring
Lights System (Luggage Compartment Illumination Lamps)
Edition
Sheet S16-P4

Code	Spanish	Français
02K025	Relé de parada de emergencia (para sistema de 12V)	Relais d'arrêt d'urgence (pour un système de 12V)
05A026	Grupo de Diodos y Resistencias	Bloc De Diodes Et De Resistances
06A001	Multiplexor 1.1	Mux 1.1
06A003	Multiplexor 2,1	Mux 2.1
07A001	Grupo de Instrumentos	Combiné D'Instruments
11E008	Luz de Puerta Delantera	Lampe Portiere Avant
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
16E018	Lámpara de Iluminación de Escalón 1 de Puerta Delantera	Lampe D'Eclairage Des Pas De La Porte Avant 1
16E019	Lámpara de Iluminación de Escalón 2 de Puerta Delantera	Lampe D'Eclairage Des Pas De La Porte Avant 2
16E020	Lámpara de Iluminación de Escalón 3 de Puerta Delantera	Lampe D'Eclairage Des Pas De La Porte Avant 3
16E021	Lámpara de Iluminación de Escalón 4 de Puerta Delantera	Lampe D'Eclairage Des Pas De La Porte Avant 4
16E057	Iluminación del Pasillo 1	Eclairage D'Allee 1
16E058	Iluminación del Pasillo 2	Eclairage D'Allee 2
16E062	Iluminación del Pasillo 6	Eclairage D'Allee 6
16E063	Iluminación del Pasillo 7	Eclairage D'Allee 7
16E064	Iluminación del Pasillo 2, Izquierda	Eclairage D'Allee 2, Gauche
16E065	Iluminación del Pasillo 3, Izquierda	Eclairage D'Allee 3, Gauche
16E066	Iluminación del Pasillo 4, Izquierda	Eclairage D'Allee 4, Gauche
16E066	Iluminación del Pasillo 4, Izquierda	Eclairage D'Allee 4, Gauche
16S017	Interruptor de Iluminación de Pasillo	Contacteur Éclairage Couloir Central

RevNo	Revision note	Date	Signature	Checked
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16S017
Aisle Illumination Switch

OFF
ON
85 75 30 25 65 55 10 95
33-60J (Br) GND
13-04L
33-16
(Br) GND
16A006 Dimmer OUT
S16-P7
FB-01(8) (3A) 24V KL.+15
S01-P5 Dash.Sw. Power

(D-21)
07A001

16E057 Aisle Illumination 1
16E058 Aisle Illumination 2
16E062 Aisle Illumination 3
16E063
16E064
16E065
16E066
16E066

1,8 K 1W
14-110A(P) (Br) GND
14-110B(P) (Br) GND
14-110C(P) (Br) GND
14-110D(P) (Br) GND
14-110E(P) (Br) GND
14-110F(P) (Br) GND
14-110G(P) (Br) GND
14-110X(P) (Br) GND

C14-05 P

(A-16) 11-36 1N5408 14-110(P)
(B-6) 11-37 1N5408 14-101(P)
06A001 MUX 1.1

OPT. (Koridor Lambaları İçin)
66-66 (E-14)
C16-04 E
06A003 MUX 2.1

05A026 Diode & Resistor Group
66-66(P) 15 3 11-34A
14-110A 19 16 11-34C
14-101A 17 6 11-34B
EMERGENCY STOP RELAY
02K025 (pin 5.)
(5) 02K025
S02-P1

C34-02 C14-05 N
E
14-101(P)

14-101D(P) (Br) GND — Front Door Lamp **11E008** Kapi sisteminde varildi
14-101(P) (Br) GND — Front Door Step 1 Illumination Lamp **16E018**
14-101B(P) (Br) GND — Front Door Step 2 Illumination Lamp **16E019**
14-101C(P) (Br) GND — Front Door Step 3 Illumination Lamp **16E020**
14-101A(P) (Br) GND — Front Door Step 4 Illumination Lamp **16E021**

Front Door acikken veya acil durumlarda basamak lambalari calisir.





Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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4) Refer to page 00.3.6 in general information section for the locations of connectors

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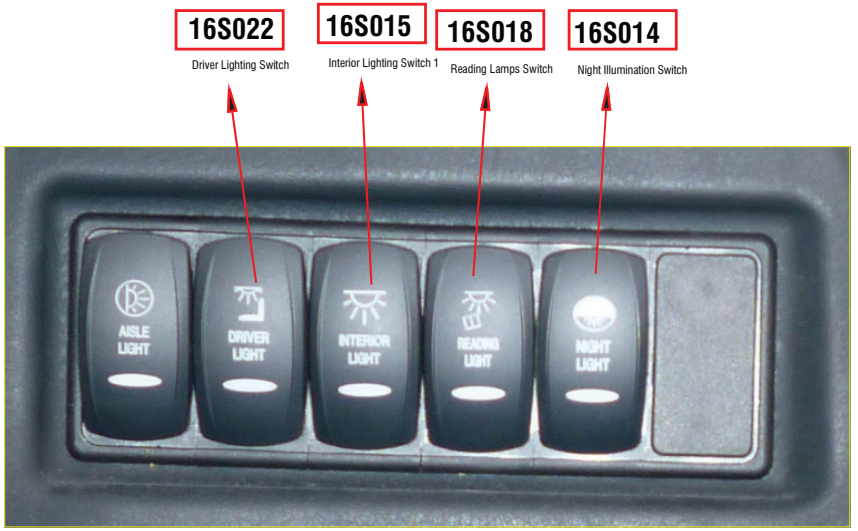
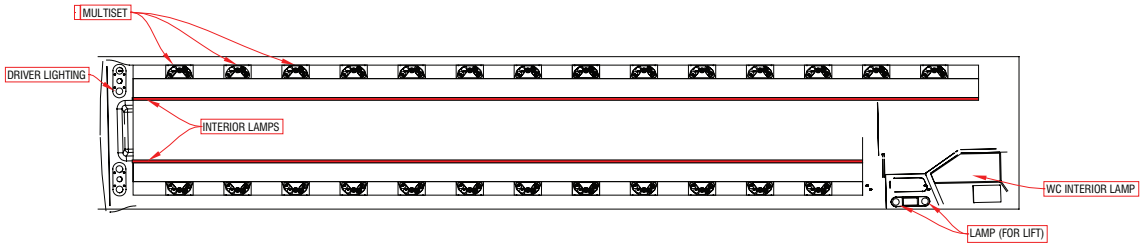
YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

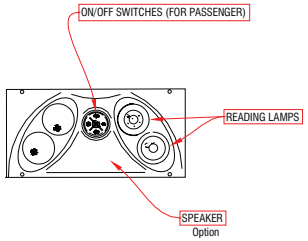
TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring
Lights System (Aisle & Step Illumination Lamps)
Edition
Sheet S16-P5

Code	Spanish	Français
01MF007	Alimentación del Panel de Relés Kl15	Alimentation Du Panneau Des Relais Kl15
06A011	Multiplexor 1,4	Mux 1.4
07A001	Grupo de Instrumentos	Combiné D'Instruments
16A006	Ajustador de brillo de luces indica-doras	Régleur de l'éclairage des lumières de l'indicateur
16A006	Ajustador de brillo de luces indica-doras	Régleur de l'éclairage des lumières de l'indicateur
16E028	Iluminación Nocturna Derecha 1	Eclairage Nocturne, Droit 1
16E033	Iluminación Nocturna Izquierda 1	Eclairage Nocturne, Gauche 1
16E039	Iluminación de Interiores 1, Derecha	Eclairage Interieur 1, Droit
16E045	Iluminación de Interiores 1, Izquierda	Eclairage Interieur 1, Gauche
16E071	Lámparas de Lectura, Derecha	Lampes De Lecture, Droit
16E073	Lámparas de Lectura, Izquierda	Lampes De Lecture, Gauche
16E147	Iluminación del Conductor	Eclairage Cote Conducteur
16S014	Interruptor de Iluminación Nocturna	Contacteur Éclairage De Nuit
16S015	Interruptor de Iluminación de Inte-riores 1	Contacteur Éclairage Niveau 1 Et 2 Habitacle
16S018	Interruptor de Luces de Lectura	Contacteur Libération Lampes De Lecture
16S022	Interruptor de Iluminación del Conductor	Contacteur Lampe Du Poste Du Conducteur









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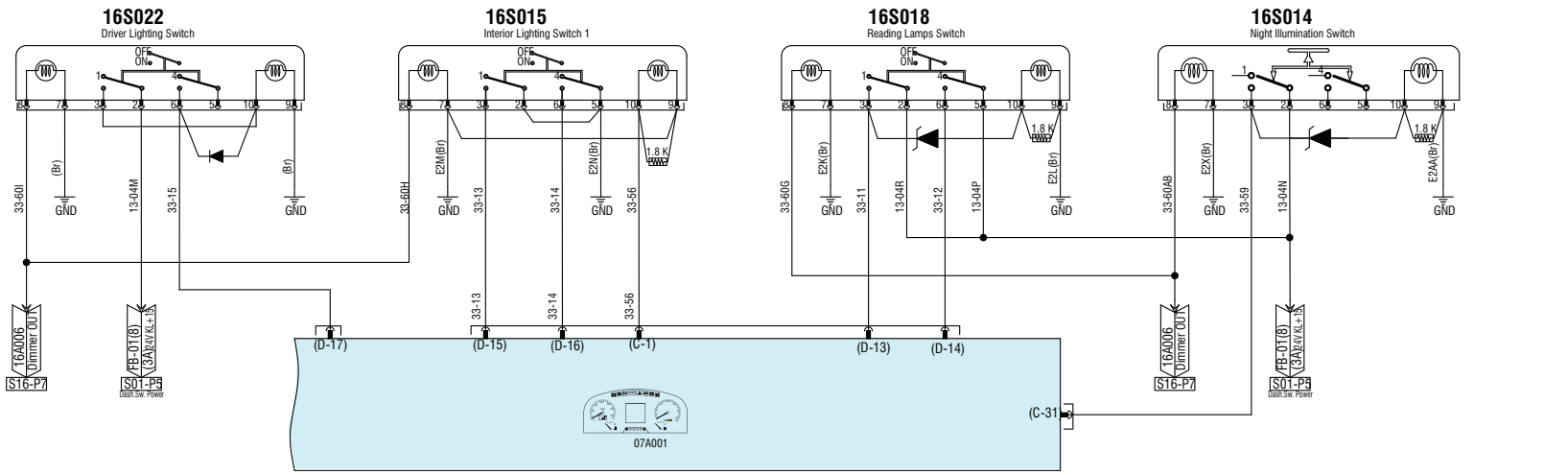

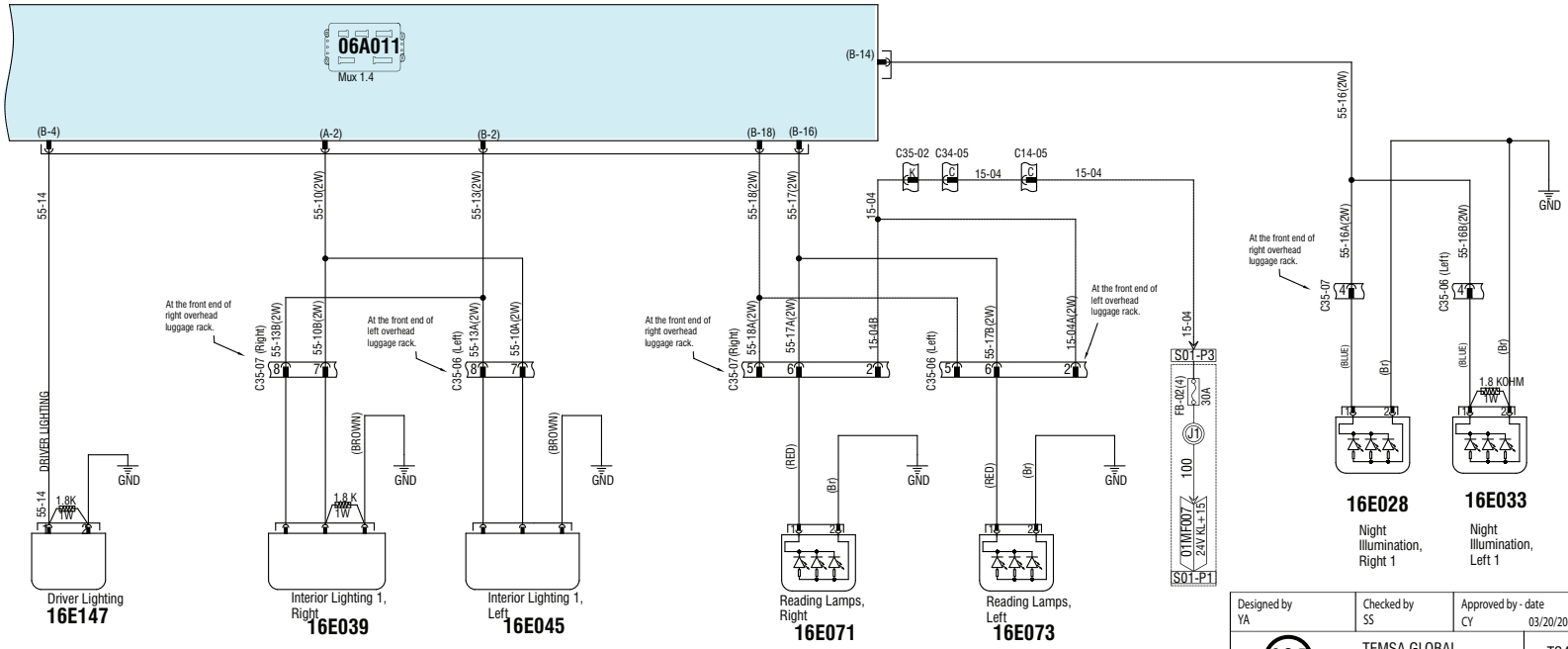

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Lights System (Interior Lighting System)

Edition

Sheet S16-P6

Code	Spanish	Français
01S002	Interruptor de Encendido del Contacto	Contacteur Contact Mis
02S001	Interruptor de Señalización de Peligro	Contacteur Feux De Détresse
03S004	Interruptor de Activación/Reanudación del Control de Crucero	Bouton De Commande Reglage/Reprise Regulateur De Vitesses
05S004	Selector de Cambios	Selecteur De Vitesses
06A005	Multiplexor 1,3	Mux 1.3
07A001	Grupo de Instrumentos	Combiné D'Instruments
08S002	Interruptor de Frenos de Escape	Commande Arrêt Bus Temporaire
09S002	Interruptor Asr	Commutateur Régulation Antipatinage Asr
10S001	Interruptor de Válvula de Nivelación	Commande Soupape De Stabilisation
10S009	Interruptor de descarga del eje	Interruptor de descarga del eje
11S002	Interruptor de Control de Puerta Delantera	Contacteur Porte 1 Conducteur
14S001	Interruptor de Ajuste de Espejos	Contacteur Réglage Du Rétroviseur
14S002	Interruptor del Espejo Térmico	Contacteur Chauffage Du Rétroviseur
14S005	Interruptor de Luneta Térmica de Ventana del Conductor	Contacteur Chauffage De Vitre Du Conducteur
14S006	Interruptor de Visera Parasol de Pasajeros	Contacteur Du Pare-Soleil Cote Passager
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
16S014	Interruptor de Iluminación Nocturna	Contacteur Éclairage De Nuit
16S017	Interruptor de Iluminación de Pasillo	Contacteur Éclairage Couloir Central
16S020	Interruptor de Faros Antiniebla Delanteros	Contacteur Des Feux Antibrouillard Avant
16S021	Interruptor de Luces de Estacionamiento	Contacteur Feu De Stationnement‹
16S022	Interruptor de Iluminación del Conductor	Contacteur Lampe Du Poste Du Conducteur
16S034	Interruptor de ajuste de intensidad de luz	Interrupteur d'ajustement de l'intensité de la lumière
18S001	Interruptor Selector de Claxon	Contacteur De Commande De Klaxon
18S003	Interruptor de Control de Dirección	Commutateur De Commande De Dirigeabilite
20S001	Interruptor de Apagado del WC	Contacteur Du Systeme D'Arret Des Toilettes
32S007	Interruptor del Elevador para Minusválidos (Elevador Abierto)	Contacteur Du Mecanisme De Levage Pour Personne Handicapee (Ascenseur Ouvert)
31A002	Unidad de monitoreo de presión de los neumáticos (Bendix/Knorr Bremse)	Unidad de monitoreo de presión de los neumáticos (Bendix/Knorr Bremse)

RevNo	Revision note	Date	Signature	Checked
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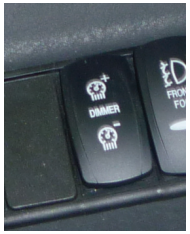
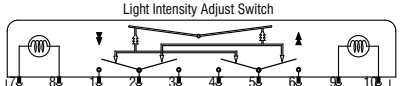


16S034
Light Intensity Adjust Switch



(Br) 33-60Y 33-53 33-54 (Br) 33-60Y

Gnd

36-60Y

33-53 33-54

(C-12) (C-13)

07A001

(E-24) 33-60K

FB-01(1) (3A) 24V XL-2.5

S01-P3 Dash Sw. Power

16A006
Indicator Lights Brightness Adjuster



33-109 33-107 33-108 33-60C (Br)

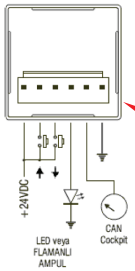
Gnd

(A-22) (E-6) (E-8)

06A005
MUX 1.3

C33-02

ELEKTRİK ŞEMASI





33-109A 33-109B

13S004 (B) 31A002 (E)

S13-P2 S13-P2

DRIVER CABIN SWITCHS

01S002 (B)	02S001 (11)	03S004 (B)	05S004 (B)	09S002 (B)	08S002 (B)	10S001 (B)	10S009 (B)	11S002 (B)	14S002 (B)	14S001 (Park)	14S006 (B)	14S005 (B)	16S020 (B)	16S021 (B)	16S017 (B)	16S022 (B)	16S014 (B)	18S003 (B)	18S001 (B)	20S001 (B)	20S001 (B)	32S007 (B)
33-60D	33-60B	33-60E	33-60	33-60T	33-60W	33-60U	33-60D	33-60C	33-60P	33-60A	33-60M	33-60 O	33-60AA	33-60Z	33-60J	33-60I	33-60AB	33-60S	33-60AG	33-60L	33-60R	33-60AC
S02-P1	S02-P1	S03-P3	S05-P1	S09-P1	S09-P2	S10-P1	S10-P1	S11-P1	S14-P1	S14-P1	S14-P2	S14-P2	S16-P1	S16-P1	S16-P5	S16-P6	S16-P6	S18-P1	S18-P2	S20-P1	S20-P1	S32-P1

DRIVER CABIN SWITCHS

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Lights System (Indicator Lights Brightness Adjuster)

Edition

Sheet S16-P7

17 AUDIO-VIDEO & GPS-NAVIGATION SYSTEMS

Code List & Locations 152
(S17-P1) REI Elite Sys. Document 153

Code List & Locations 154
(S17-P2) Preparation for REI Audio/Video System Montage 155

Code List & Locations 156
(S17-P3) Preparation for REI Blaupunt A/V system montage.....157

Code	Spanish	Français

RevNo	Revision note	Date	Signature	Checked
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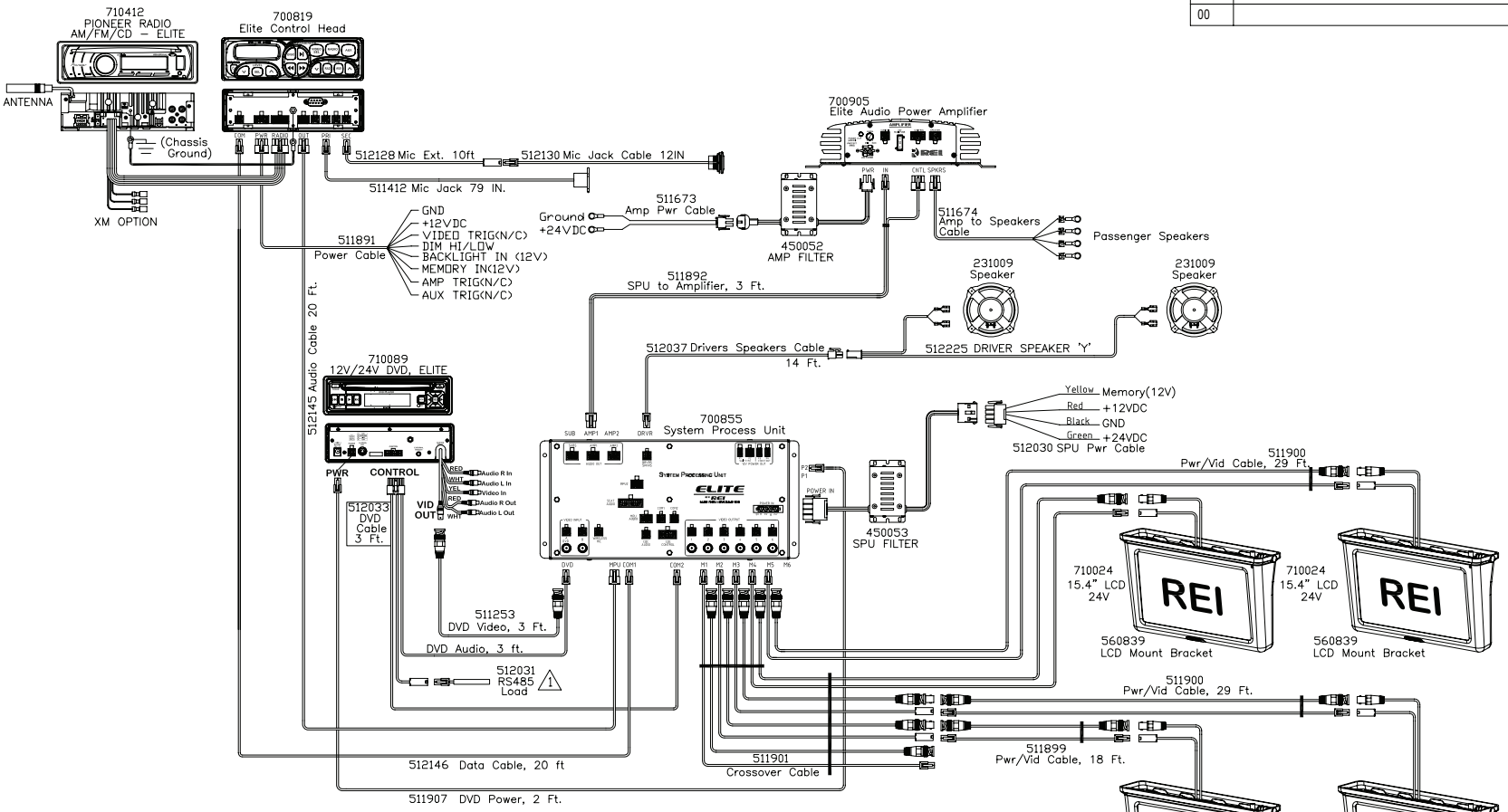

"PROPRIETARY" Property of
RADIO ENGINEERING IND., INC.
6534 'L' Street Omaha, NE

Notes:

1. Serial Termination location varies with system configuration.
2. Cable lengths not to scale.

REI
form: EliteSys Temsa
06/15/12

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Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring
Audio/ Video System (REI Elite Sys. Document)
Edition
Sheet S17-P1

Code	Spanish	Français
01MF007	Alimentación del Panel de Relés Kl15	Alimentation Du Panneau Des Relais Kl15
01S001	Interruptor Manual Principal de la Batería	Interrupteur Principal À Main Batteries
06A004	Multiplexor 1,2	Mux 1.2
17A023	Amplificador de energía (REI)	Amplificateur De Alimentation (REI)
17A024	Ordenador de a bordo del sistema AVM (UPL 090)	Ordinateur de bord pour système AVM (UPL 090)
17B007	Altavoz Izquierdo 1	Haut-Parleur 1 Ga
17B008	Altavoz Izquierdo 2	Haut-Parleur 1 Ga
17B009	Altavoz Izquierdo 3	Haut Parleur Gauche 3
17B010	Altavoz Izquierdo 4	Haut Parleur Gauche 4
17B019	Altavoz Derecho 1	Haut Parleur Droit 1
17B020	Altavoz Derecho 2	Haut Parleur Droit 2
17B021	Altavoz Derecho 3	Haut Parleur Droit 3
17B022	Altavoz Derecho 4	Haut Parleur Droit 4
17B035	Altavoz del Conductor	Haut-Parleur Cote Conducteur

RevNo	Revision note	Date	Signature	Checked
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Left Roof Luggage (Sokets)

17A023

Socket (in dash)

17A024

AUDIO/AVIDEO

VIDEO DISABLE

REI AMPLIFIER
1) AMP POWER +
2) AMP POWER -
REISYS, PROCESS UNT.
3) GREEN
4) BLACK
5) RED
6) YELLOW

SPEAKERS

1)PASSANGER LEFT (-)
2)PASSANGER LEFT (+)
3)PASSANGER RIGHT (-)
4)PASSANGER RIGHT (+)
5) DRIVER (-)
6) DRIVER (+)

17B035

Driver Loudspeaker

* 4 Ohm 11Watt

If no speakers are installed on Multisets, Sandstone Resistor (4 Ohm) shall be put instead.

17B009 17B008 17B010 17B007 17B021 17B020 17B019 17B022

55-25 55-22 55-24 55-21 55-23 55-20 55-08 55-11 55-07 55-10 55-06 55-09

L-9. L-6. L-3. L-8. L-5. Left-2. L-7. L-4. Left-1. R-3. R-6. R-9. Right-2. R-5. R-8. Right-1. R-4. R-7.

LEFT LUGGAGE RACK

RIGHT LUGGAGE RACK

55-03B 55-02B 55-05B 55-04B 35-01 35-02 35-03A 35-04 35-03 35-03B 35-04 35-05(P) 13-137(P) 15-06B(3W) 15-08 C35-01 C35-02 C34-02 C14-02 C14-03 C34-03 15-06(W) 15-06A(W) 15-10(P) 13-137(P) 15-08

(Br) GND

(E-1) (B-18) (B-16)

06A005 MUX 1.3

06A004 MUX 1.2

S01-P4 S01-P3 FB-11(7) FB-11(8) FB-02(05) FB-02(06) 5A 15A J8 J1 900 100 01TS001 12V KL+30 01MF007 24VKL+15 S01-P1

X900 (Blaupunkt Socket) (1) S17-P3

REI AMPLIFIER PASSANGER SPEAKERS OUT

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Audio/ Video System
(Preparation for REI Audio/Video system montage)

Edition

Sheet S17-P2

Code	Spanish	Français
01MF004	Alimentación del Panel de Relés Kl30	Alimentation Du Panneau Des Relais Kl30
17A022	Amplificador de energía	Amplificateur De Alimentation
17B007	Altavoz Izquierdo 1	Haut-Parleur 1 Ga
17B008	Altavoz Izquierdo 2	Haut-Parleur 1 Ga
17B009	Altavoz Izquierdo 3	Haut Parleur Gauche 3
17B010	Altavoz Izquierdo 4	Haut Parleur Gauche 4
17B019	Altavoz Derecho 1	Haut Parleur Droit 1
17B020	Altavoz Derecho 2	Haut Parleur Droit 2
17B021	Altavoz Derecho 3	Haut Parleur Droit 3
17B022	Altavoz Derecho 4	Haut Parleur Droit 4

RevNo	Revision note	Date	Signature	Checked
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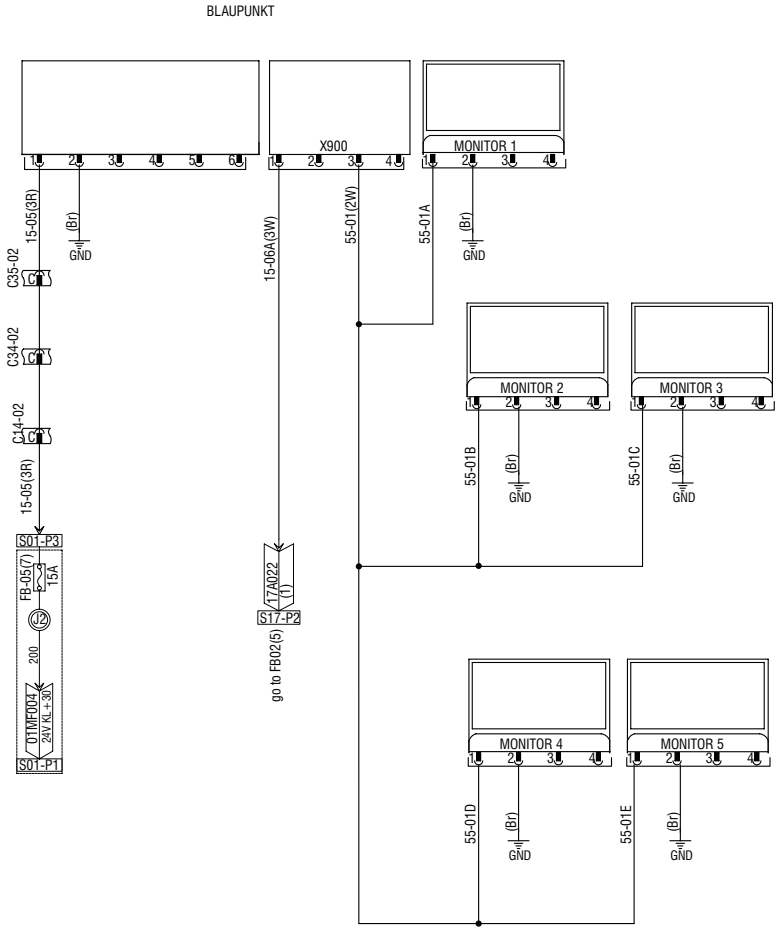

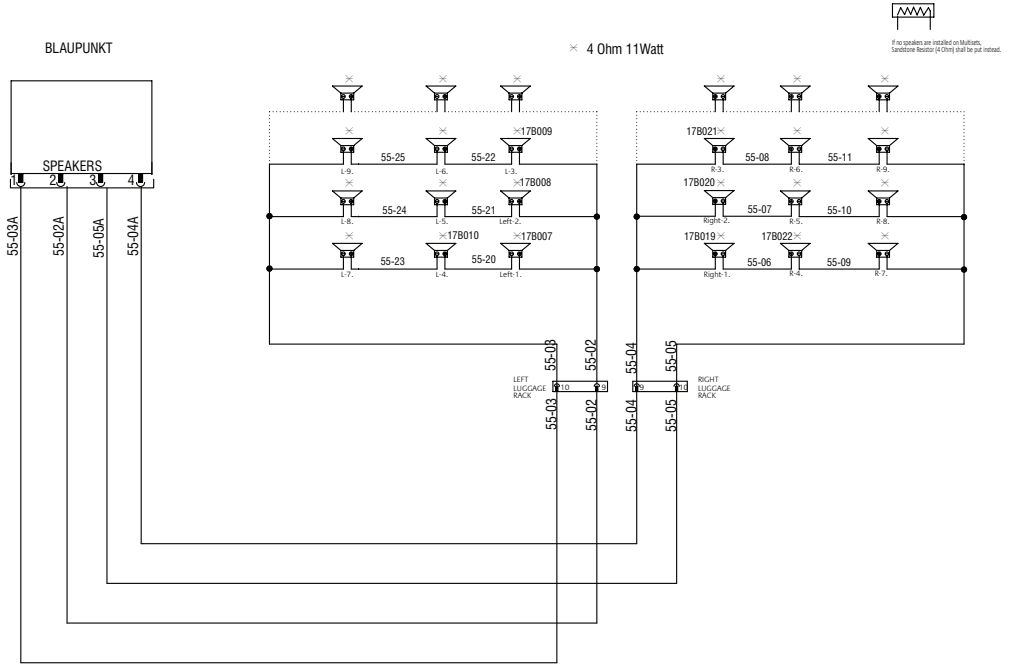

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Audio/ Video System (Bluakpunt)

Edition

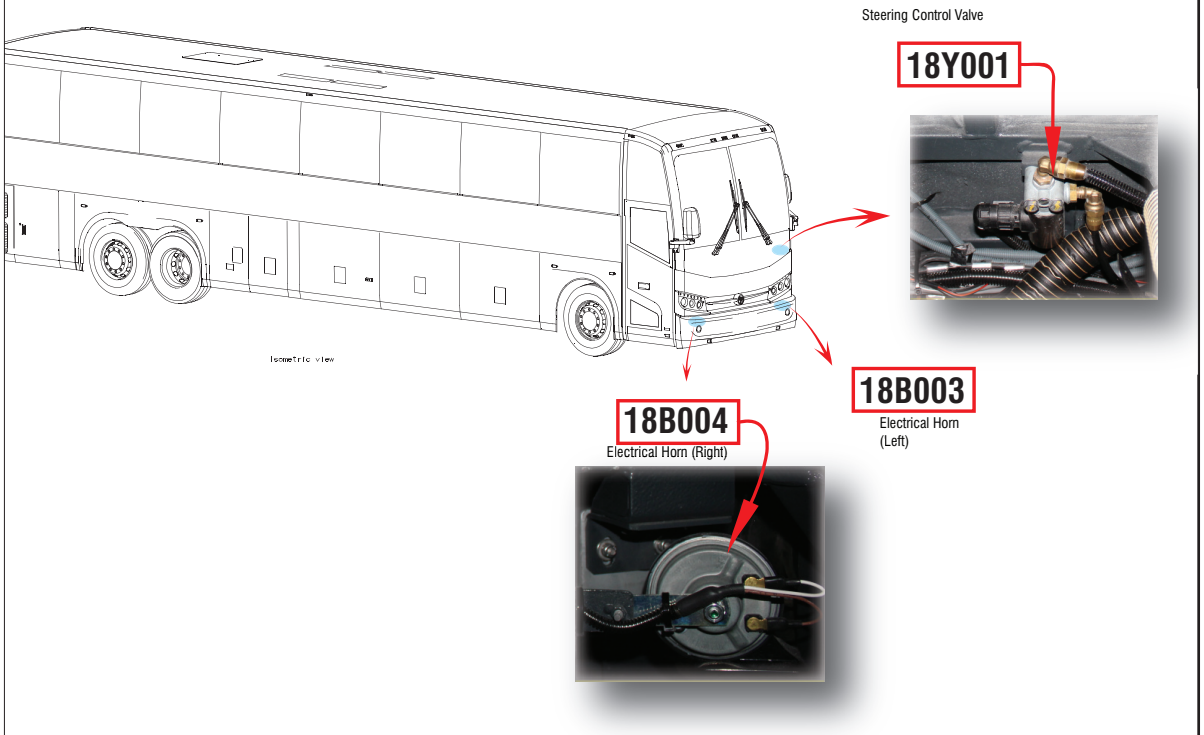
Sheet S17-P3

18 ACCESSORIES

Code List & Locations 160
(S18-P1) 12V Plug,Electrical Horn ,Steering Control, Driver Safety Belt..... 161

Code List & Locations 162
(S18-P2) Air Horn, Battary Saving Switch 163

Code	Spanish	Français
01MF004	Alimentación del Panel de Relés KI30	Alimentation Du Panneau Des Relais KI30
01MF033	Alimentación (suministrada directamente de la batería para información de memoria) de 12V KL-31	12V KL-30 Alimentation (Alimenté directement à partir de la batterie pour info mémoire)
06A005	Multiplexor 1,3	Mux 1.3
06A011	Multiplexor 1,4	Mux 1.4
07A001	Grupo de Instrumentos	Combiné D'Instruments
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
18B003	Claxon Eléctrico (izquierda)	Avertisseur Electrique (Gauche)
18B004	Claxon Eléctrico (Derecha)	Avertisseur Electrique (Droit)
18B017	Microinterruptor del cinturón de seguridad del conductor	Microinterruptor del cinturón de seguridad del conductor
18P003	Pantalla de Temperatura y Hora	Affichage De Temperature Et De Temps
18P004	Pantalla de Advertencia de WC y Cinturones de Seguridad	Voyant Lumineux Toilette Occupees Et Ceinture De Securite
18S002	Interruptor del Claxon	Contacteur De Klaxon
18S003	Interruptor de Control de Dirección	Commutateur De Commande De Dirigeabilite
18X002	Enchufe 12V	Prise 12V
18X003	Enchufe 12V 2 (opcional)	Prise 12V 2 (Option)
18Y001	Válvula de Control de Dirección	Soupape De Commande De La Direction



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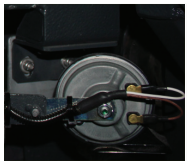




18X002 12V Plug

18X003 12V Plug 2 (Option)

18S002 Horn Switch

18S003 Steering Control Switch

18Y001 Steering Control Valve

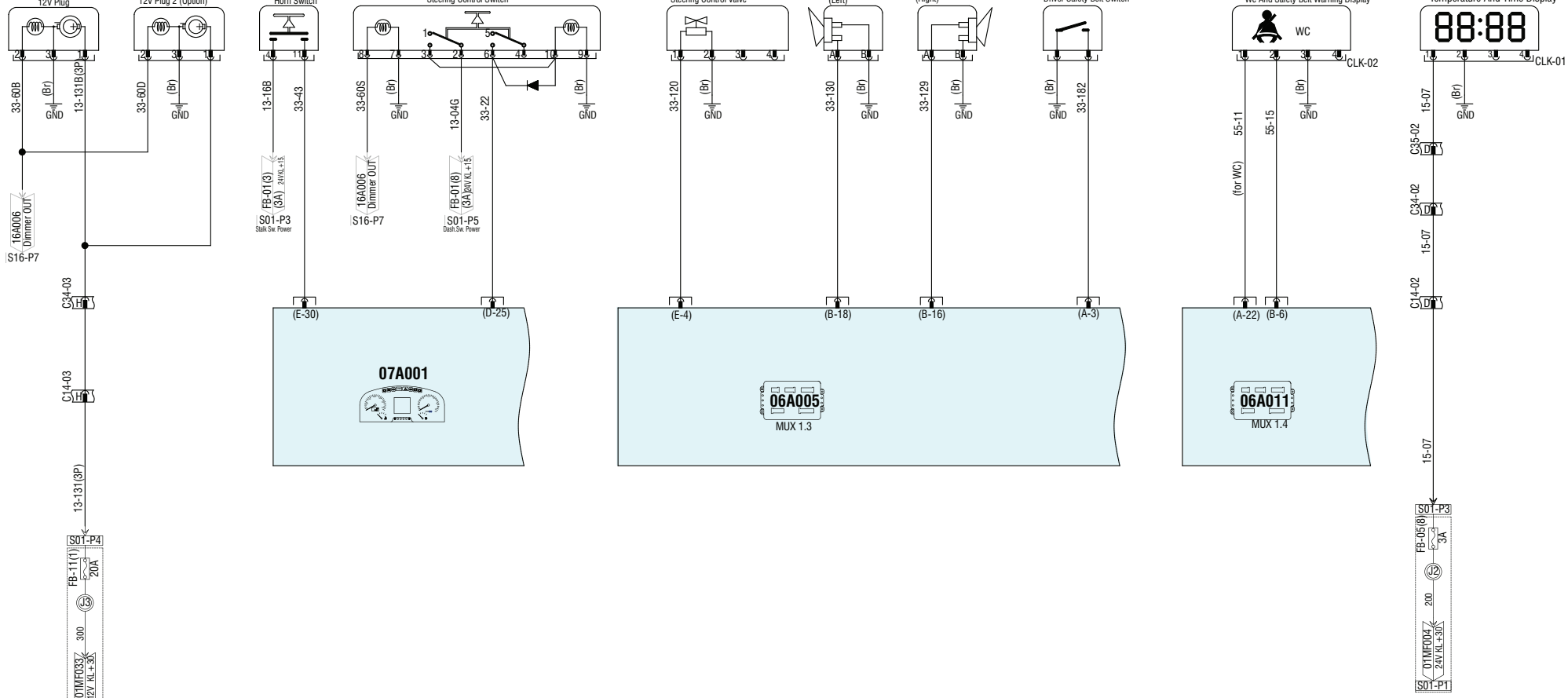
18B003 Electrical Horn (Left)

18B004 Electrical Horn (Right)

18B017 Driver Safety Belt Switch

18P004 Wc And Safety Belt Warning Display

(Option) **18P003** Temperature And Time Display



Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TS45 Epa13 Wiring

Accesories (12V Plug, Electrical Horn ,Steering Control, Driver Safety Belt)

Edition

Sheet S18-P1

Code	Spanish	Français
06A005	Multiplexor 1,3	Mux 1.3
07A001	Grupo de Instrumentos	Combiné D'Instruments
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
18B001	Claxon (izquierda)	Avertisseur Pneumatique (Gauche)
18S001	Interruptor Selector de Claxon	Contacteur De Commande De Klaxon
18S010		

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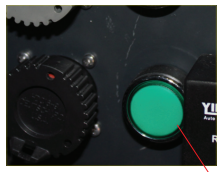



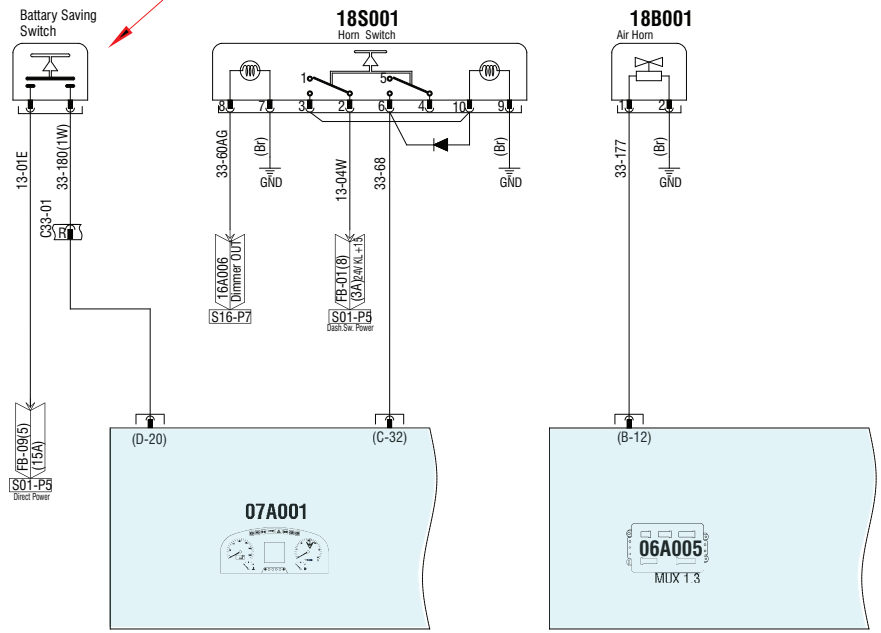

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Accesories (Air Horn, Battary Saving Switch)

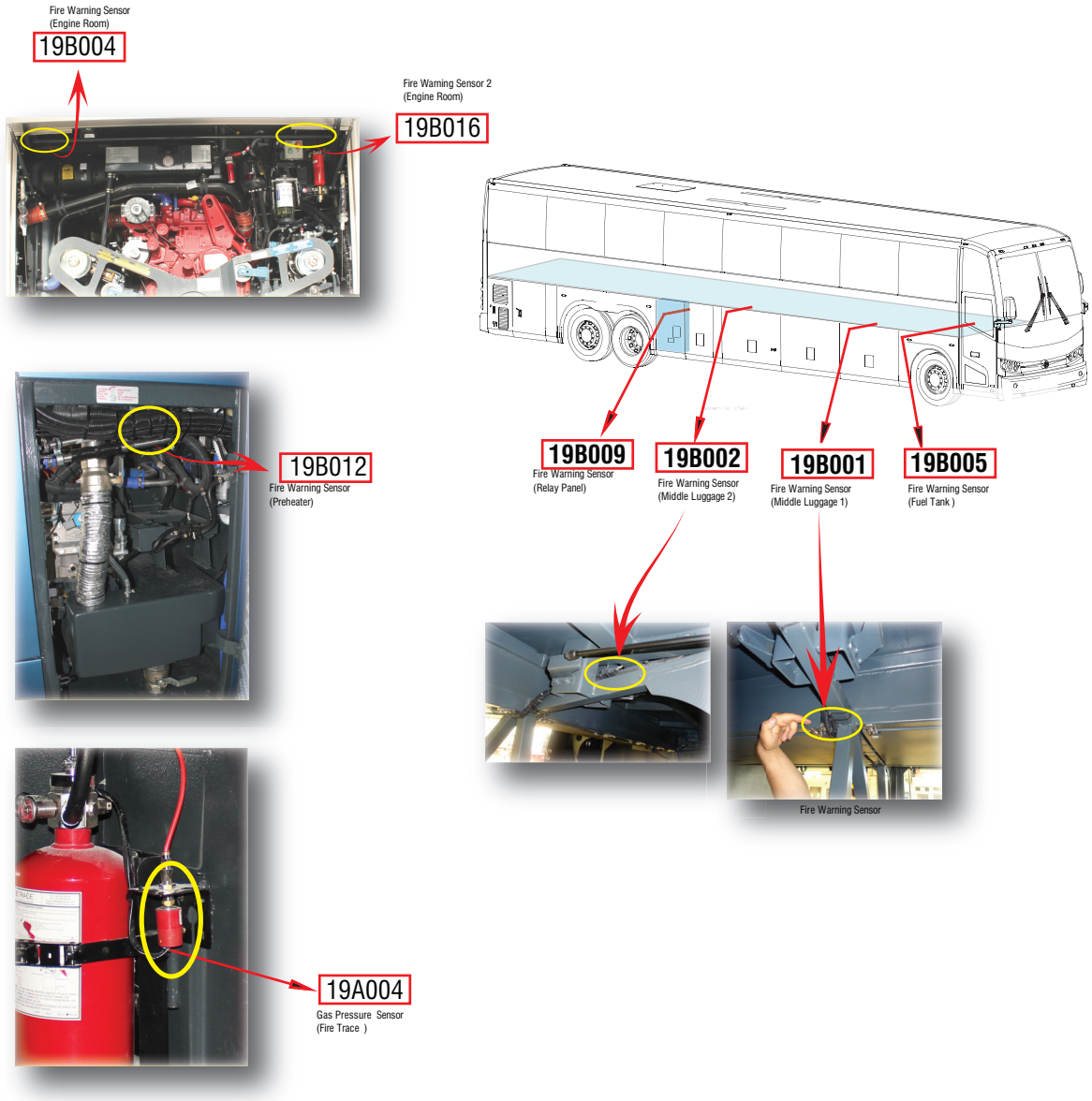
Edition

Sheet S18-P2

19 FIRE WARNING SYSTEM

Code List & Locations 166
(S19-P1) Fire Warning System 167

Code	Spanish	Français
06A001	Multiplexor 1.1	Mux 1.1
06A003	Multiplexor 2,1	Mux 2.1
19A004	Unidad de control de sistema Fogtec	Unité de contrôle du système d'alarme incendie
19B001	Sensor de Alarma de Incendios (Maletero Central 1)	Capteur D'Avertisseur De Feu (Soute Centrale 1)
19B002	Sensor de Alarma de Incendios (Maletero Central 2)	Capteur D'Avertisseur De Feu (Soute Centrale 2)
19B004	Sensor de Alarma de Incendios (Hueco del Motor)	Capteur D'Avertisseur De Feu (Bloc Moteur)
19B005	Sensor de Alarma de Incendios (Depósito de Combustible)	Capteur D'Avertisseur De Feu (Reservoir De Carburant)
19B009	Sensor de Alarma de Incendios (Panel de Relés Delantero)	Capteur D'Avertisseur De Feu (Panneau De Relais Avant)
19B012	Sensor de Alarma de Incendios (Precalentador)	Capteur D'Avertisseur De Feu (Pre-chauffage)
19B016	Sensor de Alarma de Incendios 2 (Hueco del Motor)	Capteur D'Avertisseur De Feu 2 (Bloc Moteur)



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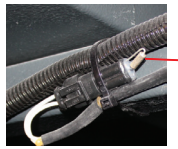
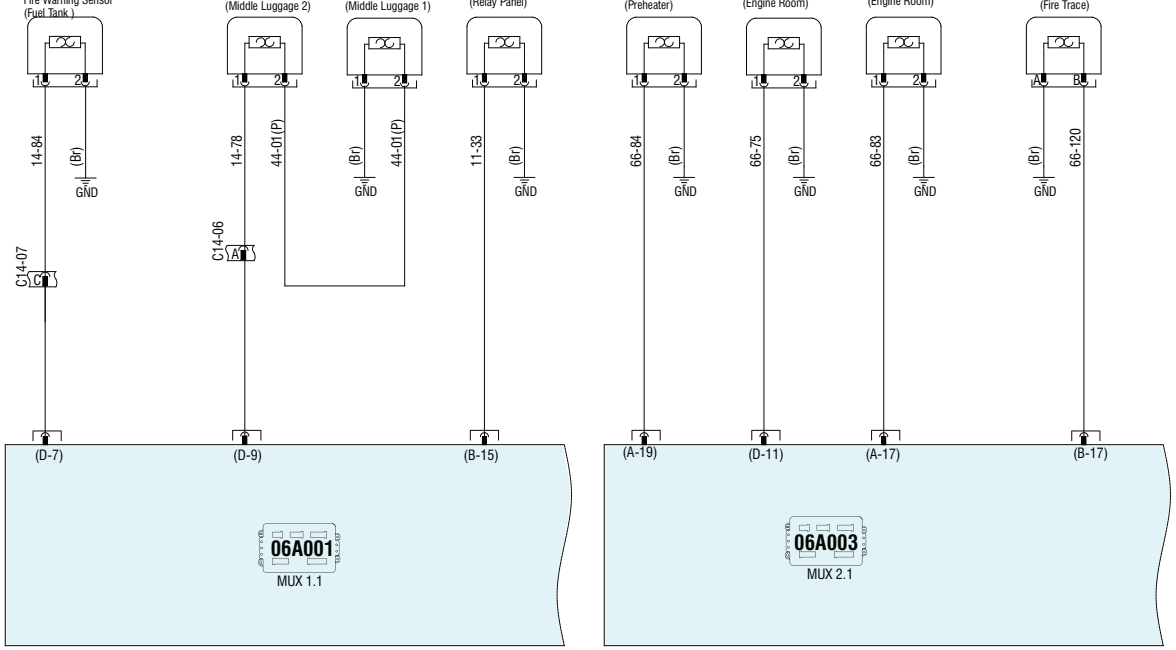


Fire Warning Sensor





Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Fire Warning System

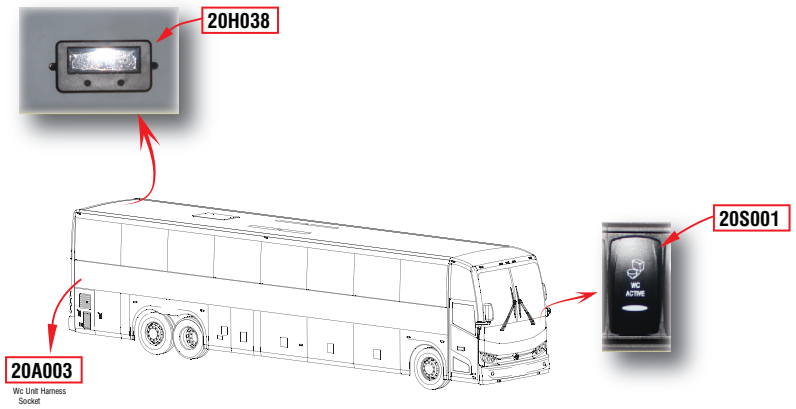
Edition

Sheet S19-P1

20 WC UNIT SYSTEM

Code List & Locations 170
(S20-P1) WC Unit System.....171

Code	Spanish	Français
06A003	Multiplexor 2,1	Mux 2.1
07A001	Grupo de Instrumentos	Combiné D'Instruments
07H038	Luz de Advertencia de WC Ocupado	Voyant Lumineux Toilette Occupee
16A006	Ajustador de brillo de luces indica-doras	Régleur de l'éclairage des lumières de l'indicateur
20A003	Arnés del WC	Harnais De Toilette
20S001	Interruptor de Apagado del WC	Contacteur Du Systeme D'Arret Des Toilettes





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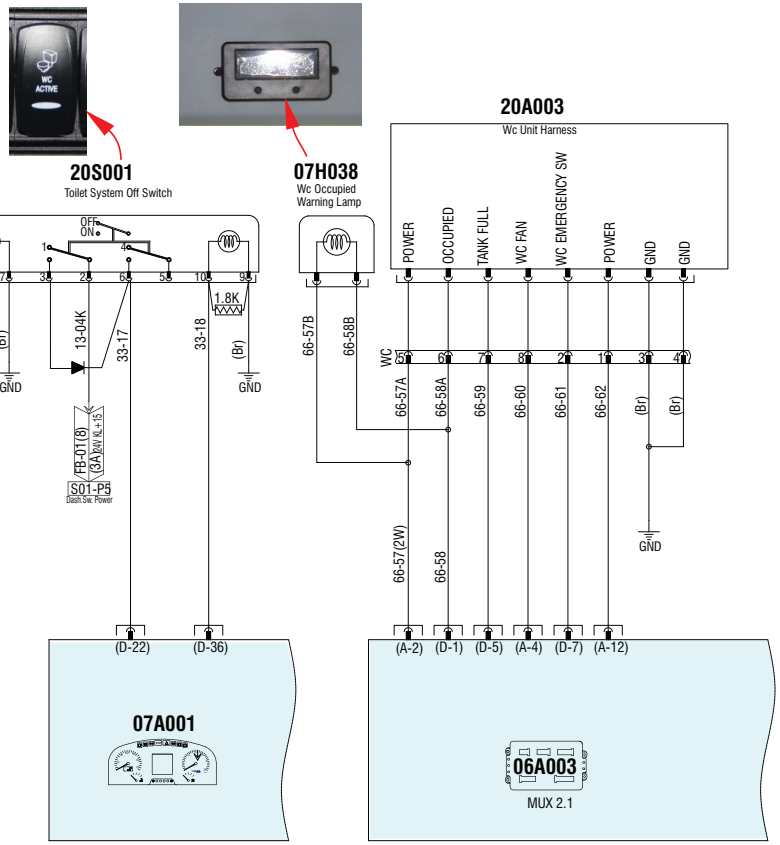

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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YA	SS	CY 03/20/2014	9020-230Y	04/15/2014	1:1

TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

WC Unit System

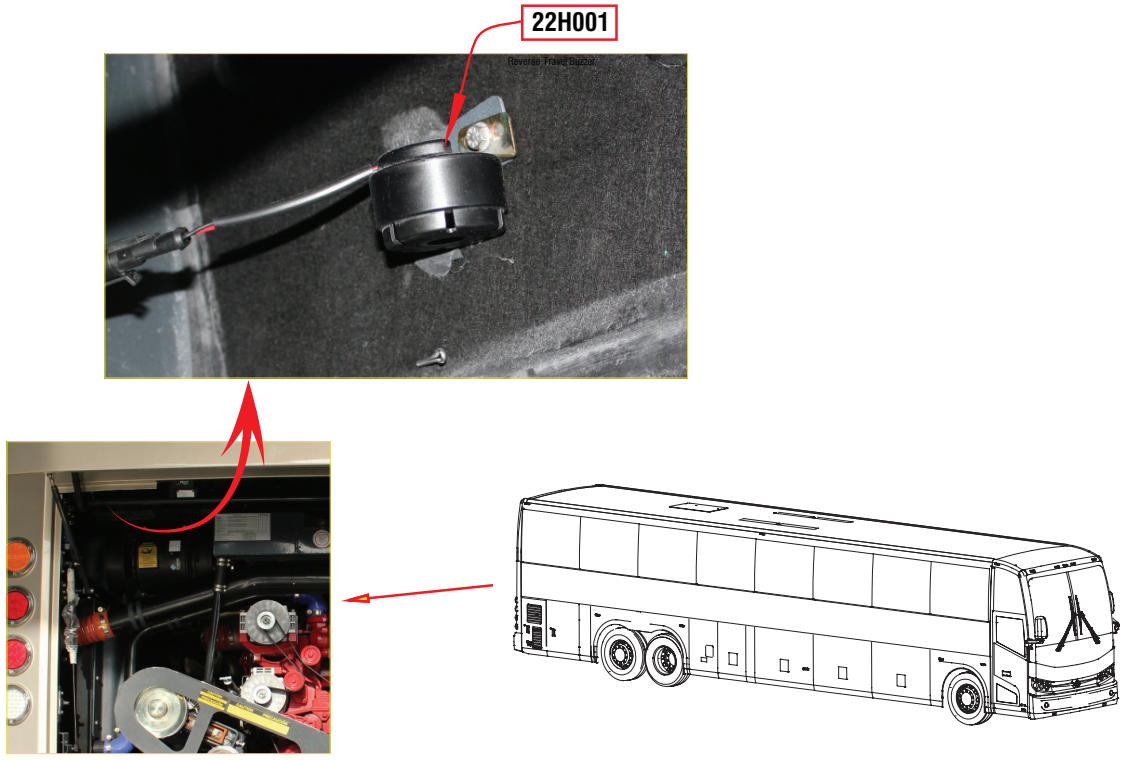
Edition

Sheet S20-P1

22 REVERSE GEAR BUZZER

Code List & Locations 174
(S22-P1) Reverse Gear Buzzer 175

Code	Spanish	Français
06A003	Multiplexor 2,1	Mux 2.1
22H001	Aviso Sonoro de Marcha Atrás	Bruiteur De Marche Arriere



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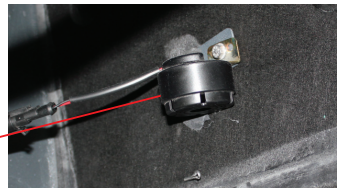

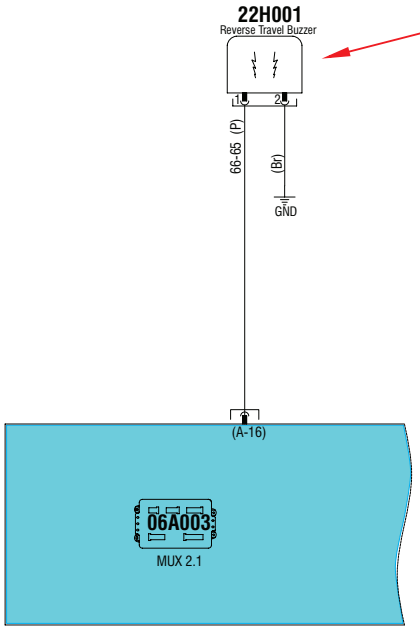

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring

Reverse Gear Buzzer | Edition | Sheet S22-P1

24

CENTRAL LOCK SYSTEM

Code List & Locations 178
(S24-P1) Central Locking System 179

Code	Spanish	Français
06A001	Multiplexor 1.1	Mux 1.1
07A001	Grupo de Instrumentos	Combiné D'Instruments
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
24S003	Interruptor de Cierre Central-izado	Contacteur Du Verrouillage Central
24Y001	Válvula de Cierre Centralizado	Soupape De Verrouillage Central

RevNo	Revision note	Date	Signature	Checked
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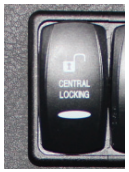

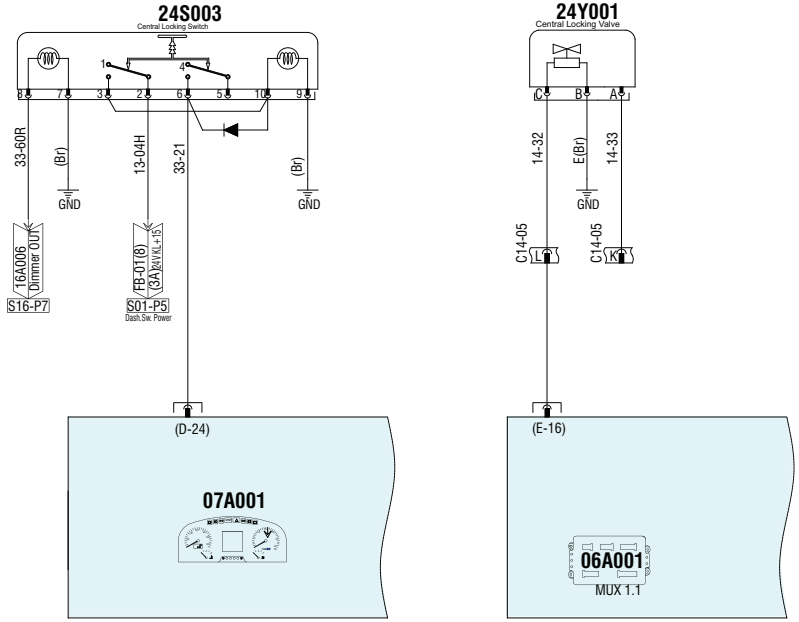

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
2) As the Multiplex units are controlled by special algorithm,in case needed, the latest vehicle program should be downloaded from online system E-DOC .
3) This booklet is published for serial production vehicles. Refer to E-DOC online to access the most up-to-date booklets by entering vehicle VIN number.
4) Refer to page 00.3.6 in general information section for the locations of connectors

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TEMSA GLOBAL SANAYİ VE TİCARET A.Ş.

TS45 Epa13 Wiring
Central Locking System

Edition

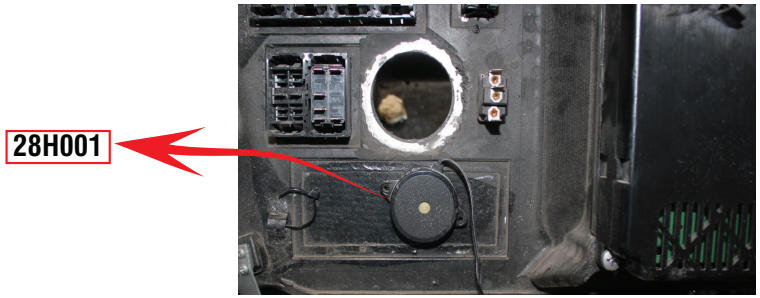
Sheet S24-P1

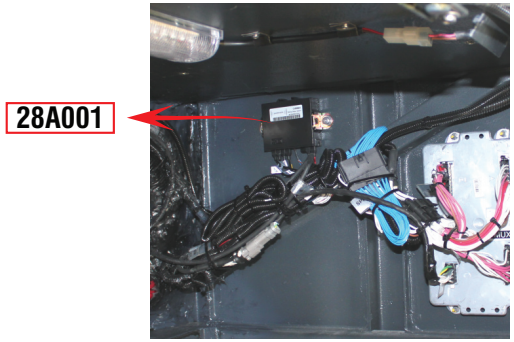
28

PARK ASSISTANT & REAR VIEW CAMERA SYSTEM

Code List & Locations 182
(S28-P1) Park Assistant System & Rear View Camera Systems 183

Code	Spanish	Français
01MF007	Alimentación del Panel de Relés KI15	Alimentation Du Panneau Des Relais KI15
06A003	Multiplexor 2,1	Mux 2.1
06A005	Multiplexor 1,3	Mux 1.3
22A001	Cámara de Control de Marcha Atrás	Camera De Surveillance De Marche Arriere
22A003	Monitor de Control de Marcha Atrás (Waeco)	Moniteur De Surveillance De Marche Arriere (Waeco)
28A001	Módulo de Control de Asistencia en Estacionamiento	Module De Commande Du Dispositif D'Aide Au Stationnement
28B001	Sensor de Asistencia en Estacionamiento 1	Capteur Du Dispositif D'Aide Au Stationnement 1
28B002	Sensor de Asistencia en Estacionamiento 2	Capteur Du Dispositif D'Aide Au Stationnement 2
28B003	Sensor de Asistencia en Estacionamiento 3	Capteur Du Dispositif D'Aide Au Stationnement 3
28B004	Sensor de Asistencia en Estacionamiento 4	Capteur Du Dispositif D'Aide Au Stationnement 4
28H001	Aviso Sonoro de la Unidad de Asistencia en Estacionamiento 1	Bruiteur Du Capteur Du Dispositif D'Aide Au Stationnement 1







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Reverse Travel Monitoring Monitor (Waeco)

22A003

28H001



22A001 Reverse Travel Monitoring Camera

GREEN

36-110

36-109

SOCKET

RED

BLACK

BRAUN

(Br)

GND

33-69

06A005 MUX 1.3

(B4)

06A003 MUX 2.1

(B-6)

66-130

13-59

C34-05

C14-01

(Br)

GND

C33-01

C34-02

C14-07

C16-01

36-109

36-110

28A001 Parking Aid Control Module

Free pins

28B004

28B003

28B002

28B001

13-59

S01-P3

FB-02(8)

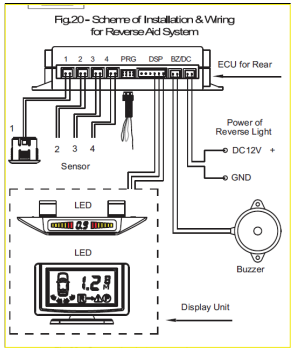
5A

100

01MF007

24VKL+15

S01-P1



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TS45 Epa13 Wiring

Park Assistant System & Rear View Camera System

Edition

Sheet S28-P1

30 INVERTER SYSTEM

Code List & Locations 186
(S30-P1) Inverter System 187

Code	Spanish	Français
01MF004	Alimentación del Panel de Relés Kl30	Alimentation Du Panneau Des Relais Kl30
01MF028	Convertidor de Corriente 1 de 24V/110V	24V/110V Transformateur Puissance 1
01MF029	Convertidor de Corriente 2 de 24V/110V	24V/110V Transformateur Puissance 2
06A001	Multiplexor 1.1	Mux 1.1
07A001	Grupo de Instrumentos	Combiné D'Instruments
30A003	Inversor 24V/110V 1	24V/110V Transformateur 1
30A004	Inversor 24V/110V 2	24V/110V Transformateur 2
30K003	Relé de Inversor Activo 24V/110V	24V/110V Actif Relais De Transformateur
30K004	Relé del Inversor 24/110V	Relais D'Inversion 24/110V
30S003	Interruptor del Inversor 24/110V	Contacteur D'Inversion 24/110V
30X001	Enchufe del compartimento de pasajeos 1 de 110V	Enchufe del compartimento de pasajeos 1 de 110V

RevNo	Revision note	Date	Signature	Checked
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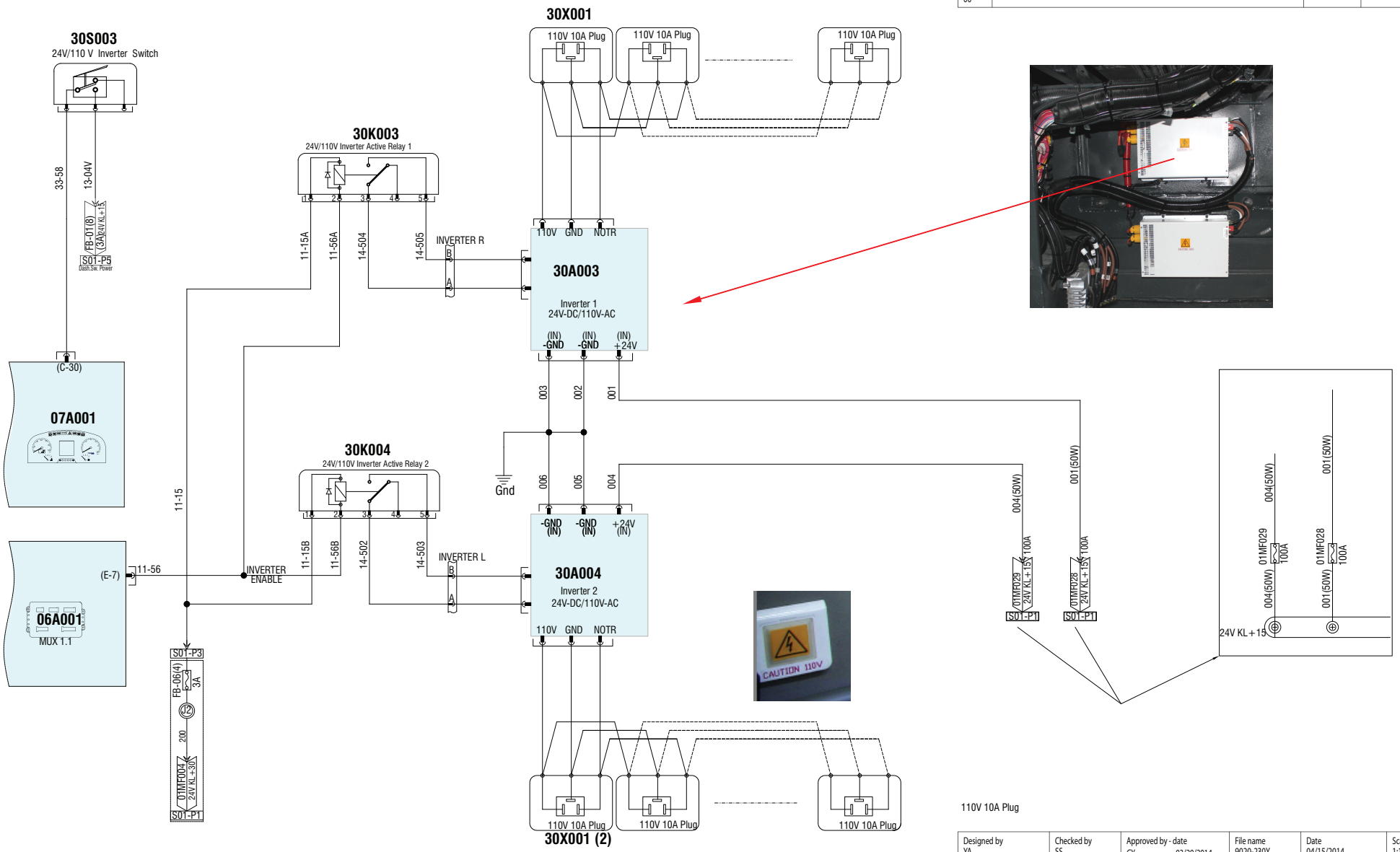

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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4) Refer to page 00.3.6 in general information section for the locations of connectors

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TS45 Epa13 Wiring

Inverter System

Edition

Sheet S30-P1

31

TIRE PRESSURE And TEMPERATURE CONTROL

Code List & Locations 190
(S31-P1) Tire Pressure and Temperature Control System (OEM Cable Harness) 191

Code List & Locations 192
(S31-P2) Tire Pressure and Temperature Control System 193

Code	Spanish	Français

RevNo	Revision note	Date	Signature	Checked
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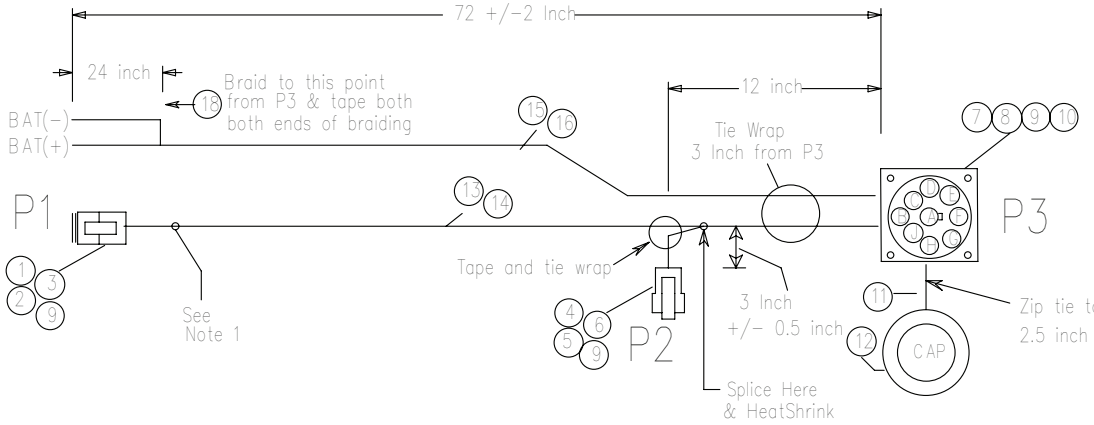

J1939-DIAGNOSTIC PORT inter-connections

P3 PIN#	CKT	P1 and P2 PIN#	WIRE CLR
A	BAT(-)	--	BLK
B	BAT(+)	--	RED
C	CAN-H	A	YEL
D	CAN-L	B	GRN
E	Not Used	C	
F	RESERVED	--	
G	RESERVED	--	
H	RESERVED	--	
J	RESERVED	--	

Power Connection

P3 PIN#	CKT	Flying Leads WIRE CLR
B	VIN	RED
A	GND	BLK

NOTE:

1. Cable requires ID label with; "SmarTire", Smartire Stock code number, Rel / Rev, batch #".

UNLESS OTHERWISE SPECIFIED TOLERANCE:

Metric (mm)	Imperial (Inch)
XX. = +/- 0.25	XX. = +/- 1
0.X = +/- 0.1	0.X = +/- 0.1
0.XX = +/- 0.01	0.XX = +/- 0.01
	0.00.3.6 = +/- 0.001

CAN Receiver Wiring Harness – Lite-Diag.

260.0310.AD

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UNLESS OTHERWISE SPECIFIED TOLERANCE:
Metric (mm): XX. = +/- 0.5; 0.X = +/- 0.25; 0.XX = +/- 0.05
Imperial (Inch): XX. = +/- 1; 0.X = +/- 0.1; 0.XX = +/- 0.01; 0.00.3.6 = +/- 0.001

Proto ( ) Pre L: ( ) Production (●)

See Page 1

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Richmond, BC., V6V 2J1
Canada

Title: CABLE HARNESS, CAN RECEIVER ALL-MAKE LITE

Drawing No: 260.0309.AD | 1 | 3 | REL | REV.

Part No: 260.0309

SHEET 2 of 2

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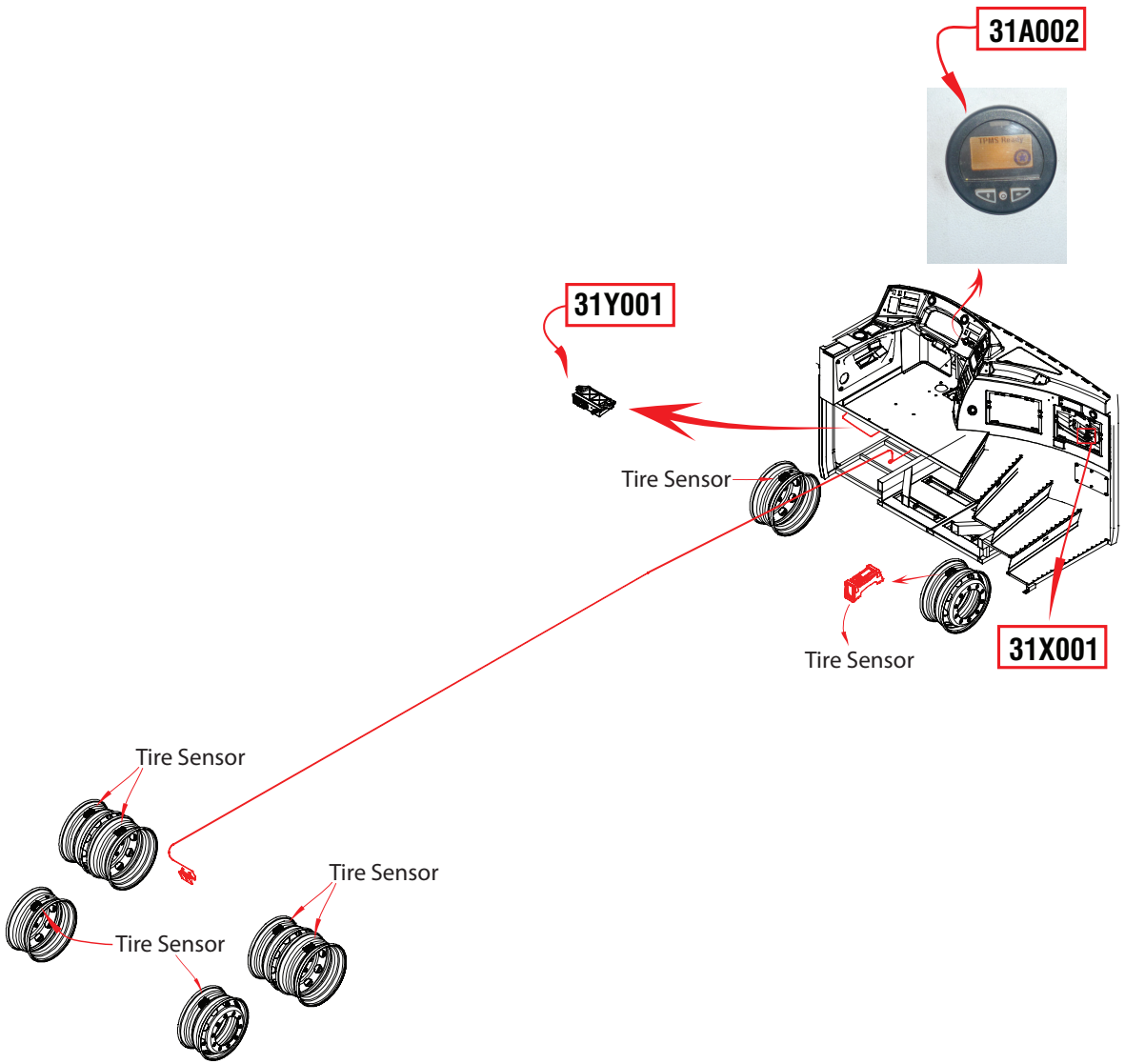
TS45 Epa13 Wiring

Tire Pressure System (Cable Harness)

Edition

Sheet S31-P1

Code	Spanish	Français
06A005	Multiplexor 1,3	Mux 1.3
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
31A002	Unidad de monitoreo de presión de los neumáticos (Bendix/Knorr Bremse)	Unidad de monitoreo de presión de los neumáticos (Bendix/Knorr Bremse)
31X001	Pantalla de Conexión del presión de los neumáticos	Prise Du Pantalla de presión de los neumáticos
31Y001	Unidad Wi-Fi (fidelidad inalám-brica)	Appareil Wi-Fi (Fidélité sans fil)
01K012	Relé del Encendido (Panel de Relés Frontal)	Relais De Reveil (Panneau De Relais Avant)



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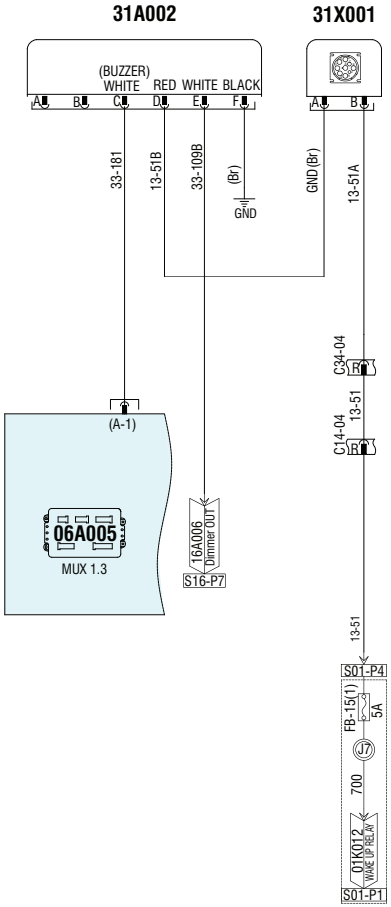
Wireless Gateway Receiver







1.0 SYSTEM OVERVIEW

1.1 SYSTEM COMPONENTS



Wireless Gateway Receiver

The Wireless Gateway Receiver forms the "brain" of the SmarTire™ platform. The receiver captures data transmissions from tire sensors mounted on each wheel which is then analyzed against programmed user-defined settings and, if it determines that a tire is under-inflated or running over temperature, an alert is triggered. Robust and weatherproof in design, the Wireless Gateway Receiver can be conveniently mounted directly to the vehicle's chassis. It also interfaces with the vehicle's J1939 network for seamless integration.



SmartWave Display

Real-time tire pressure and temperature information is available to the driver on demand via the SmarTire™ display. If the system detects a tire that is under-inflated or overly hot, the display will alert the driver to the condition before it becomes dangerous.



Standard Tire Sensor

Industrially designed for the harsh environment of a commercial truck tire, the tire sensor measures internal tire pressure and temperature every 12 seconds and transmits data every three to five minutes. If the system detects a pressure change of 3 PSI (0.206 bar) or greater, it breaks its regular schedule and transmits data immediately. Each tire sensor is mounted in a break away cradle so that in the event of in-field damage, the sensor remains unbroken.



Stainless Steel Tire Strap

Tire sensors are mounted to the surface of the rim using a stainless steel strap. Installed by Bendix on hundreds of thousands of wheels world wide, strap mounting is the most reliable and universal method of sensor installation available.



Antenna

Wireless signals from tires on the front axle are captured by the wireless gateway directly. Signals from the rear axles and the trailer are captured by an antenna mounted at the rear of the vehicle. An external antenna ensures signal reception reliability so that SmarTire™ TPMS always has up-to-date tire status information accessible at the push of a button.



Trailer Lamp

When a tire problem occurs on a towed trailer, the trailer lamp will clearly indicate it to the driver. The lamp illuminates at the first sign of trouble, as well as flashes to indicate the type of problem found.

1.2 MAINTENANCE TOOLS



Maintenance Hand-Tool

Maintaining tires in the yard is just as important as real-time tire information for the driver, but most TPMS systems don't take maintenance personnel into account. The SmarTire™ universal hand tool acts like an 'electronic billy-club' allowing maintenance personnel to wirelessly 'ping' a tire to measure its pressure and temperature. The SmarTire™ hand tool improves inflation accuracy and reduces diagnostic time in order to keep every tire rolling safely and cost effectively. (Maintenance Tool comes with a separate manual).



LF Tool

The LF Tool allows the user to wirelessly 'ping' a tire and can be used instead of a Hand Tool to add tires to the system configuration, either during the initial setup or when tires are changed.

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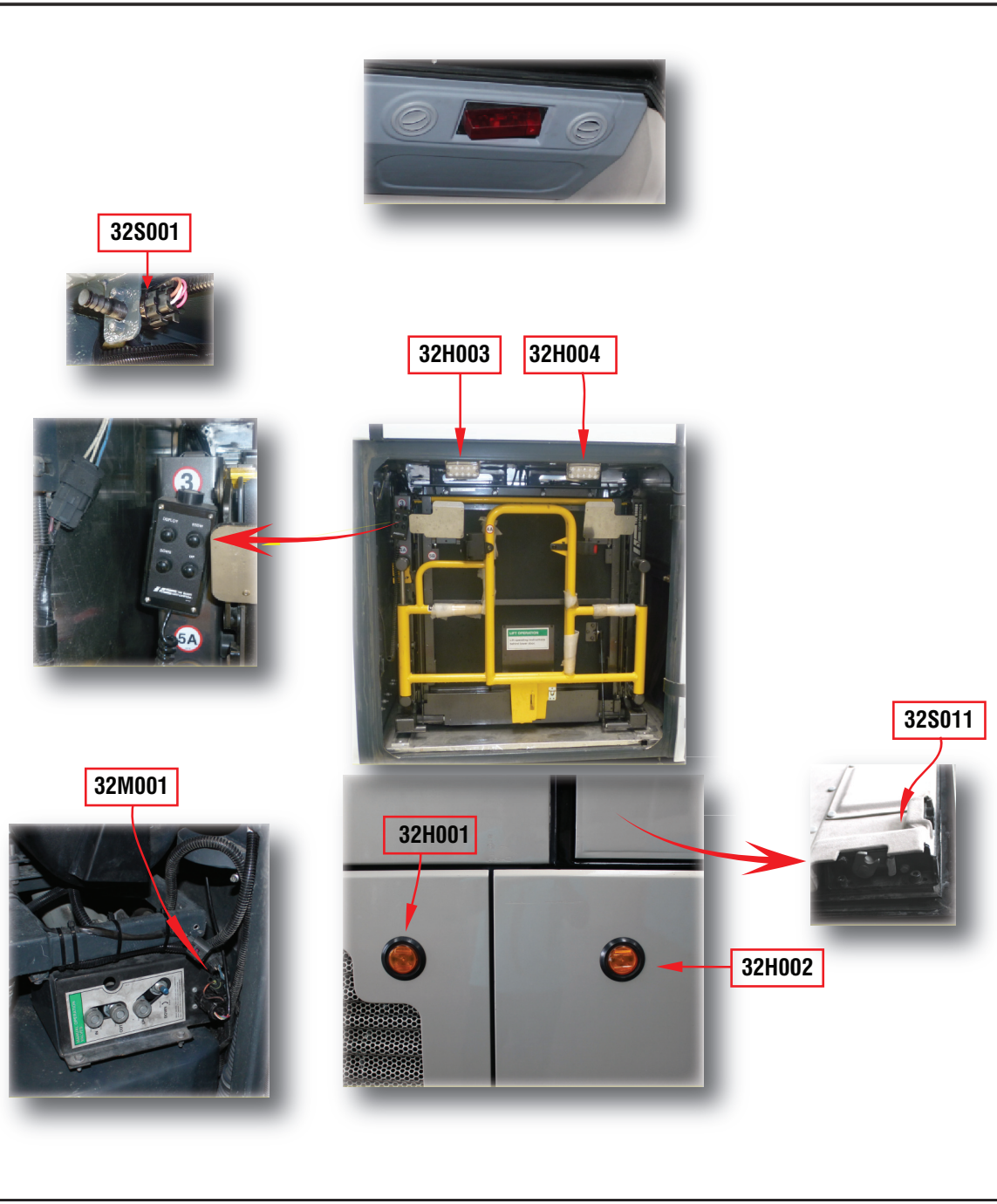
TS45 Epa13 Wiring

Tire Pressure System | Edition | Sheet S31-P2

32 HANDICAPPED LIFT SYSTEM

Code List & Locations 196
(S32-P1) Handicapped Lift Systems..... .. 197

Code	Spanish	Français
01MF022	Alimentación del Elevador	Puissance Du Mecanisme De Levage
06A011	Multiplexor 1,4	Mux 1.4
07A001	Grupo de Instrumentos	Combiné D'Instruments
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur
32A003	Unidad Operativa del Elevador para Minusválidos	Unité De Commande Ascenceur Pour Handicapés
32A007	Elevador para Minusválidos	Mecanisme De Levage Des Handicapes
32H001	Testigo de advertencia de elevación	Témoin d'avertissement du pont
32H002	Testigo de advertencia de elevación 2	Témoin d'avertissement du pont 2
32H003	Testigo de advertencia de elevación 3	Témoin d'avertissement du pont 3
32H004	Testigo de advertencia de elevación 4	Témoin d'avertissement du pont 4
32M001	Motor de Bloqueo de Seguridad del Elevador para Minusválidos	Moteur De Verrouillage De La Portiere De Securite De L'Ascenseur Pour Personne Handicapee
32S001	Interruptor de Advertencia al Conductor de Pasajeros Minusválidos (En La Puerta)	Commutateur D'Avertissement Du Conducteur Pour Passager Handicape (Sur La Portiere)
32S005	Interruptor de Encendido del Elevador para Minusválidos	Contacteur Validation Ascenseur Pour Handicapés
32S011	Interruptor de advertencia de apertura de puerta de pasajeros de elevador para discapacitados	Interruptor de advertencia de apertura de puerta de pasajeros de elevador para discapacitados
08Y001	Válvula de Parada Temporal de Bus	Valve Frein De Stationnement/Verrou Antidémarrage



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01	08S001 has been canceled , 08Y001 moved 32. system.	21 June 2014	DN	YA









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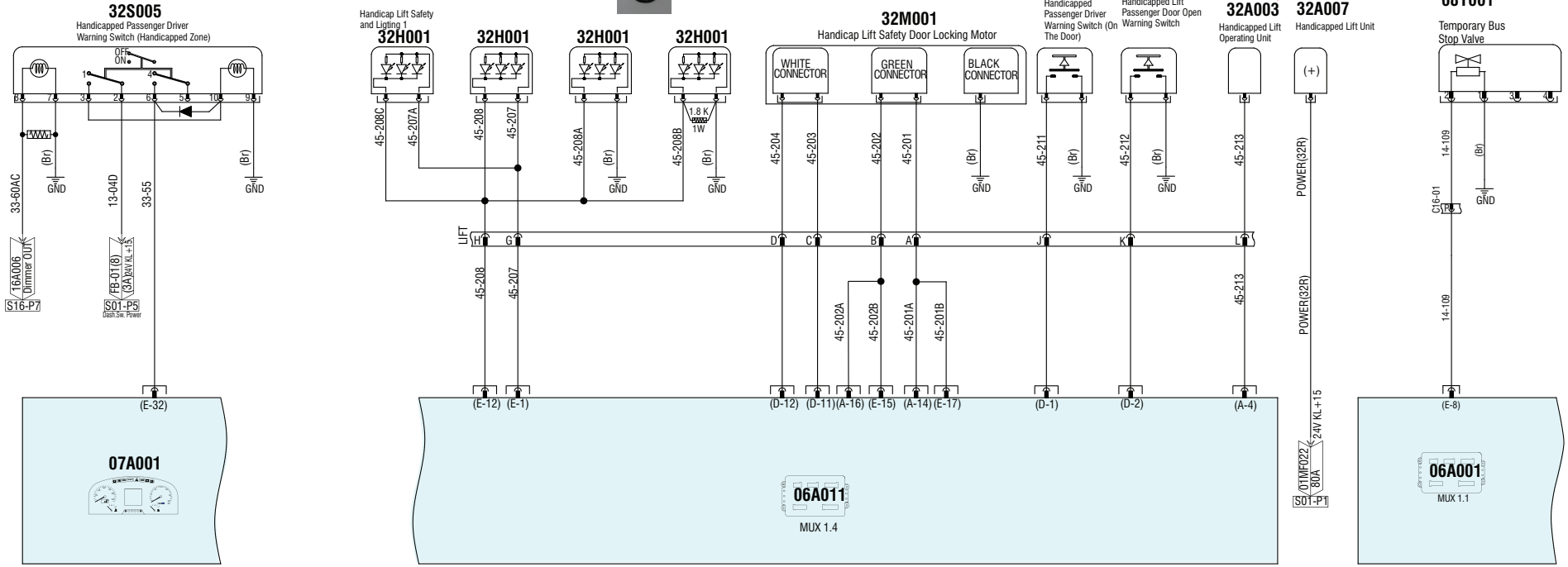

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4) Refer to page XXX in general information section for the locations of connectors

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TS45 Epa13 Wiring

Handicapped Lift Systems | Edition | Sheet S32-P1

39 LANE DEPARTURE SYSTEM

Code List & Locations 200
(S39-P1) Lane Departure System..... 201

Code	Spanish	Français
06A005	Multiplexor 1,3	Mux 1.3
39A001		
39B001		
39B002		
39E001		
39E002		
39S001		
16A006	Ajustador de brillo de luces indicadoras	Régleur de l'éclairage des lumières de l'indicateur





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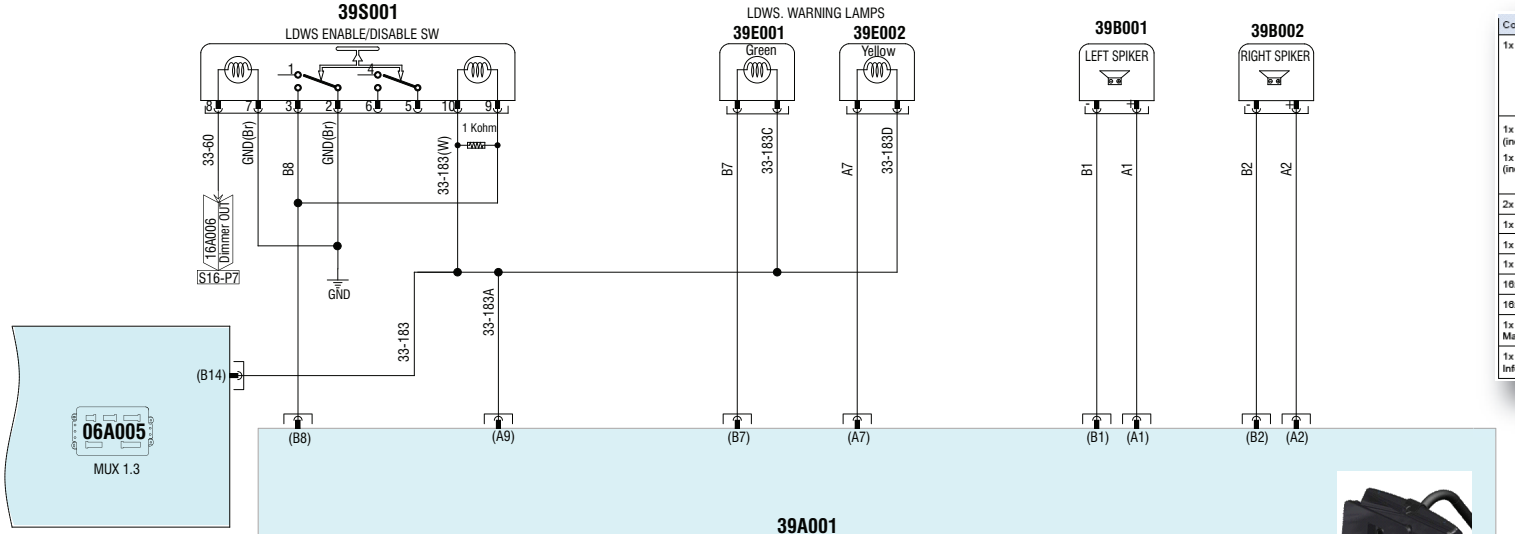

Component	Figure
1x camera with connector cable	
1x mounting bracket (inclination angle range 75-90°) 1x mounting bracket (inclination angle range 60-75°)	
2x T-15 torx screws	
1x Secondary lock A	
1x Secondary lock B	
1x Female Connector Shell	
16x Female Terminal Pins (18 AWG)	
16x Female Terminal Pins (20 AWG)	
1x Publication "OnLane – Installation Manual"	
1x Publication "OnLane – Driver Information"	

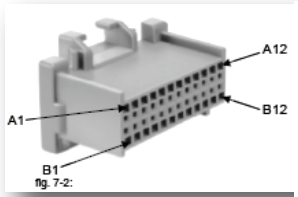

fig. 7-2:

Row A		Row B	
Pin no.	Signal name	Pin no.	Signal name
A1	Left loudspeaker output +	B1	Left loudspeaker output -
A2	Right loudspeaker output +	B2	Right loudspeaker output -
A3	Not used	B3	Not used
A4	Input, left direction indicator (optional)	B4	Input, right direction indicator (optional)
A5	Not used	B5	Not used
A6	Not used	B6	Not used
A7	OnLane Deactivated/Fault indication output or Audio Silent output or left seat vibration output	B7	OnLane "Ready to warn" indication output or Audio Silent output or right seat vibration output
A8	Braking signal input (optional)	B8	Activate/Deactivate input switch (optional)
A9	Key 15 (ignition)	B9	Key 31 (grounding)
A10	Not used	B10	Not used
A11	Not used	B11	Not used
A12	CAN J1939 High	B12	CAN J1939 Low

Component	Figure
1x Switch	
1x Cable harness	
2x Speaker	
1x Installation kit	

Notes: 1) Refer to Section 6 and Section 7 for hardware pin-out of MOKI, ZR32, MULTIPLEXERS and CAN Lines.
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4) Refer to page 00.3.6 in general information section for the locations of connectors

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TS45 Epa13 Wiring

Lane Departure System | Edition | Sheet S39-P1

APPENDIXES

LogiCAD - User Manual Appendix1/Logicad

logi.CAD CONTROL CENTER

TEMSA
Value in motion

Software Downloading

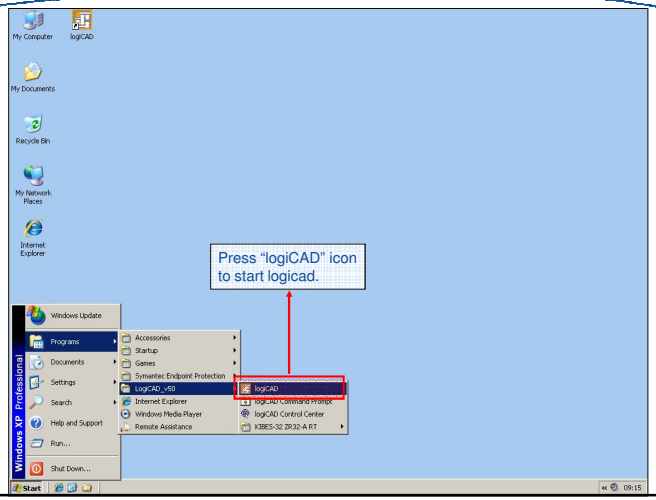
Option Selection

Online Test

User Manual

1

TEMSA



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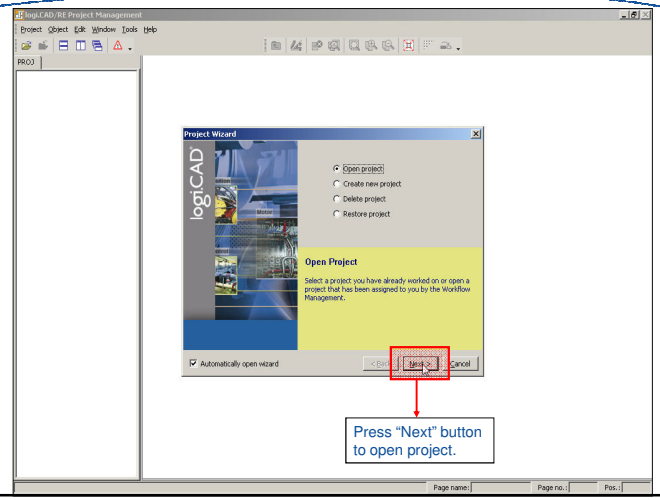

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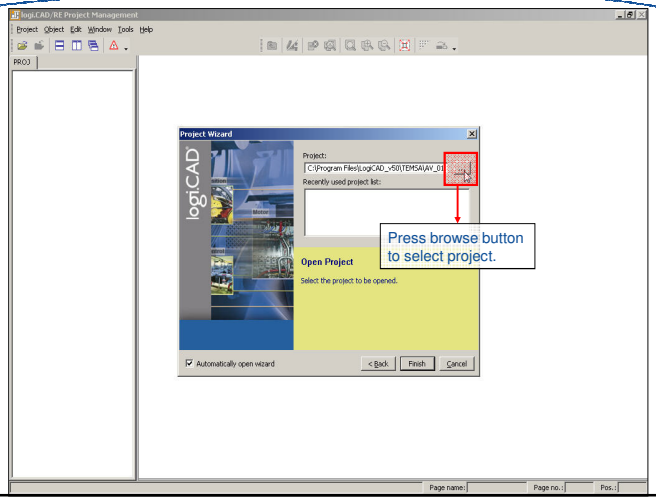

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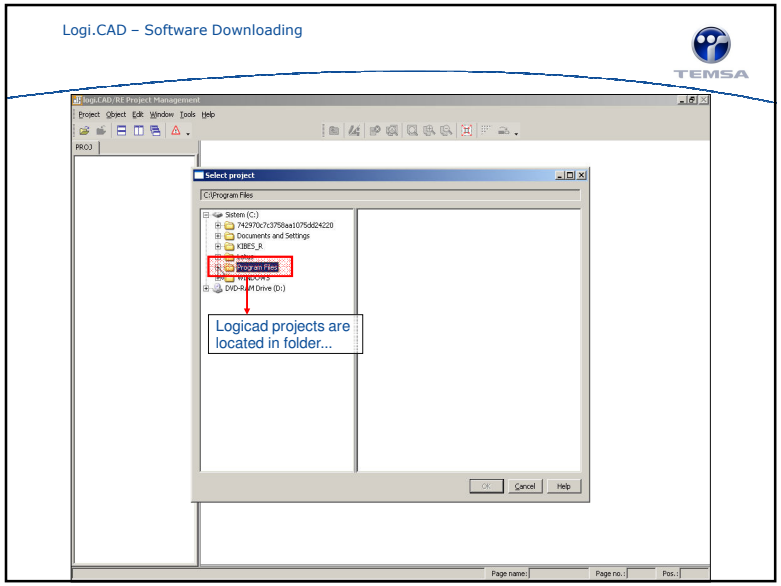
Logi.CAD – Software Downloading



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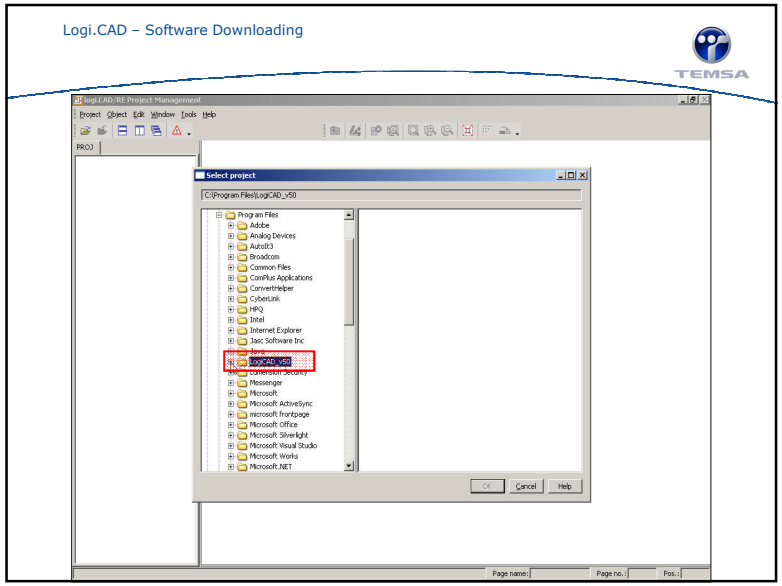

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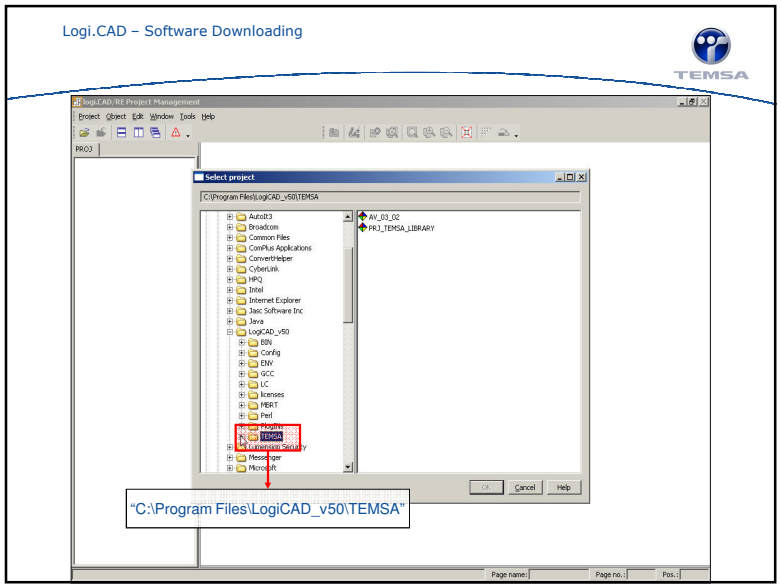

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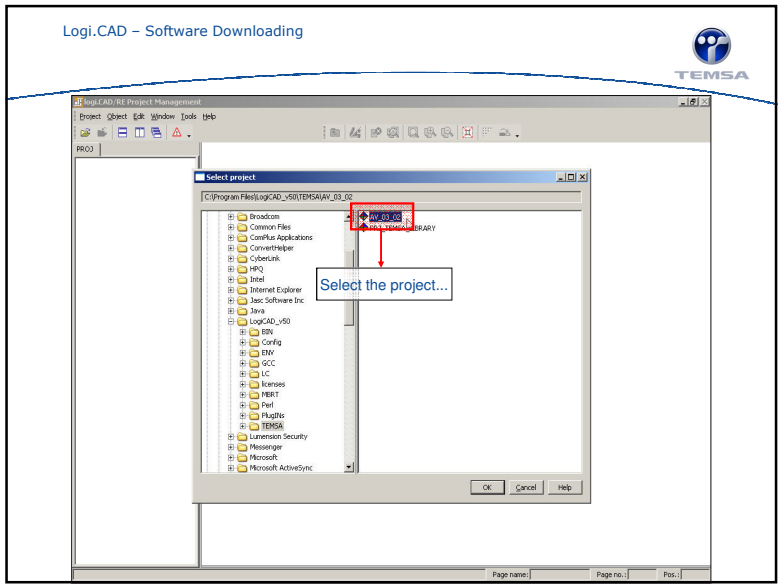

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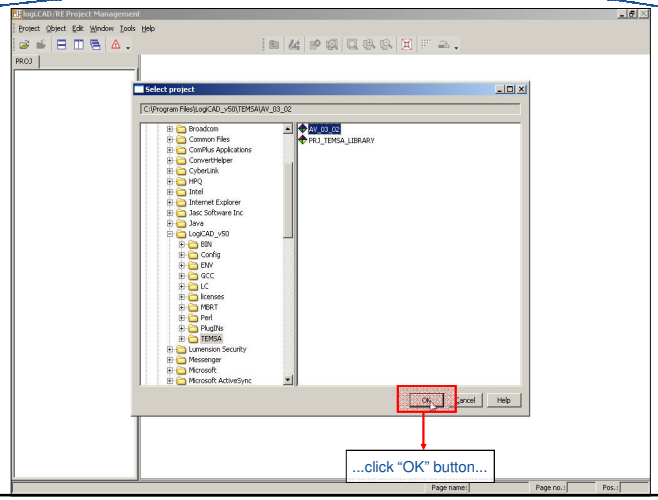

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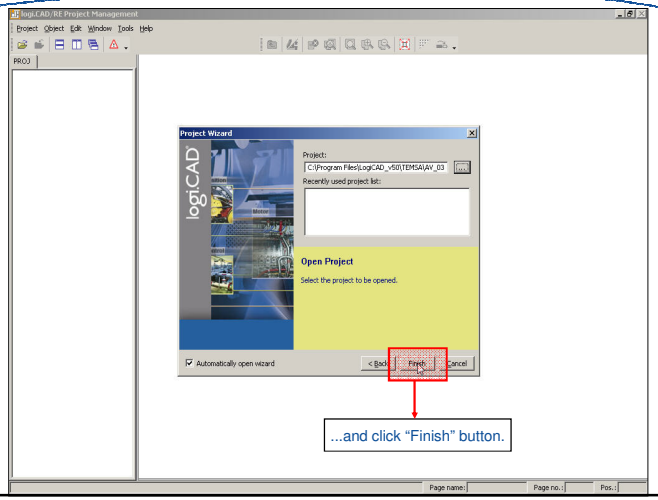
Logi.CAD – Software Downloading



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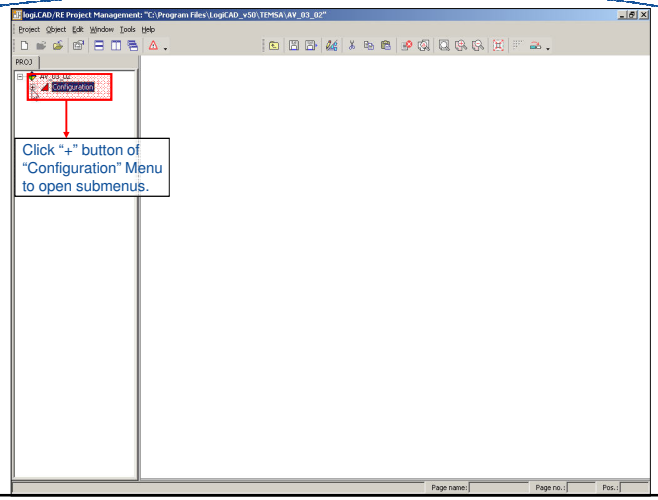

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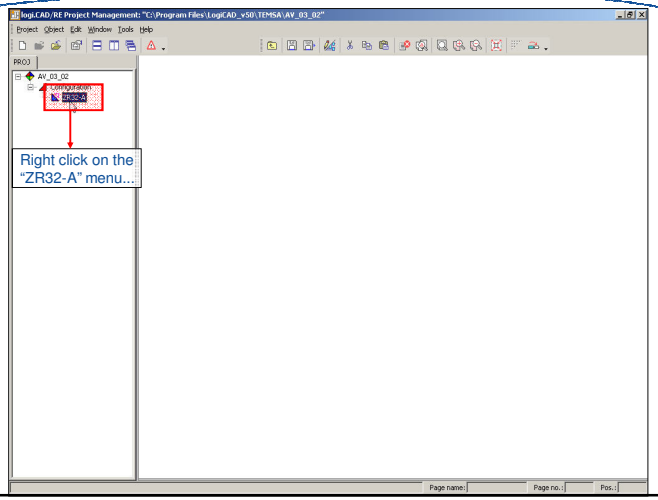

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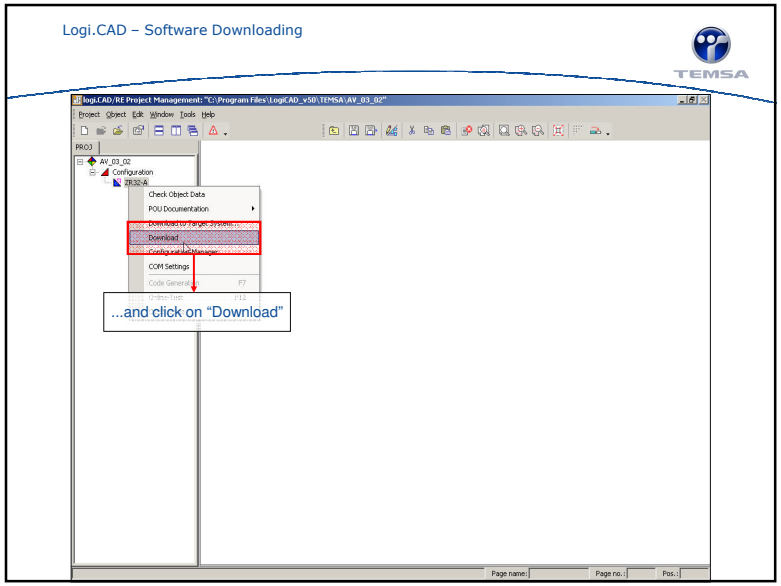

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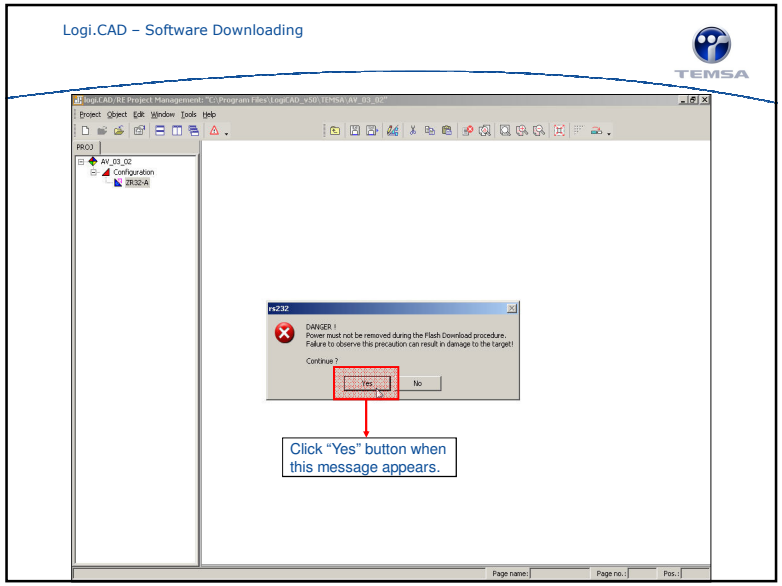

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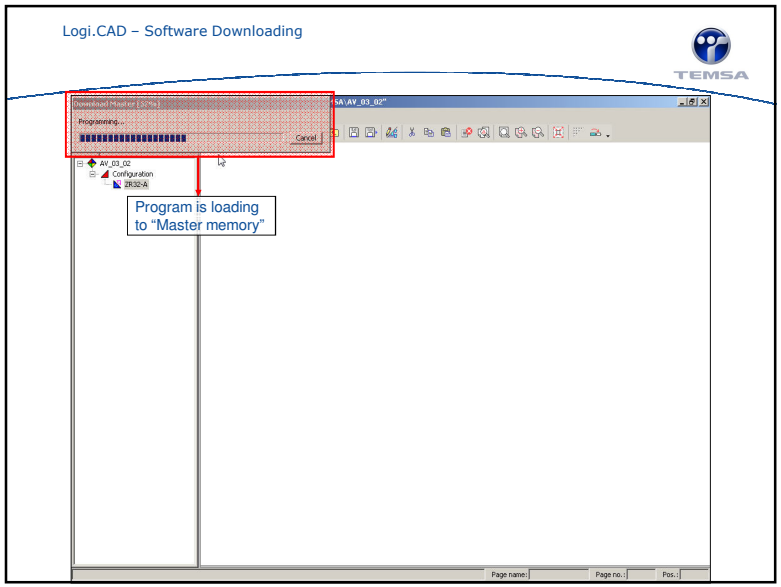

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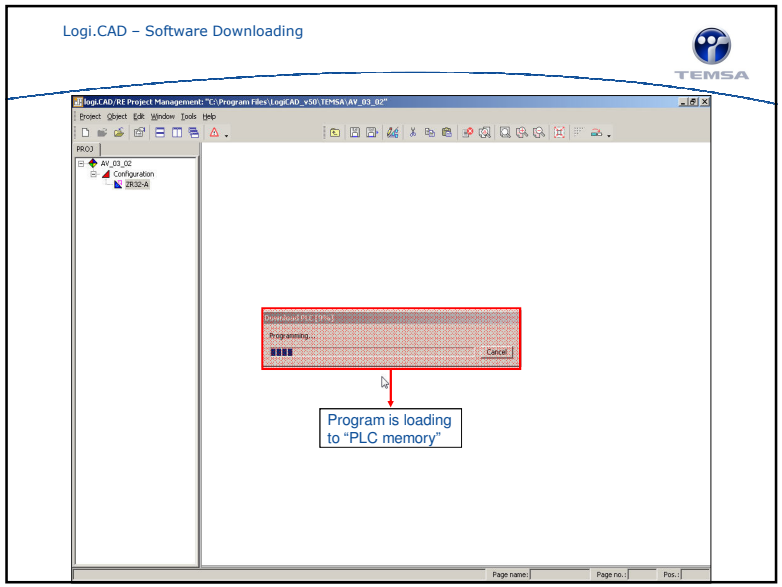

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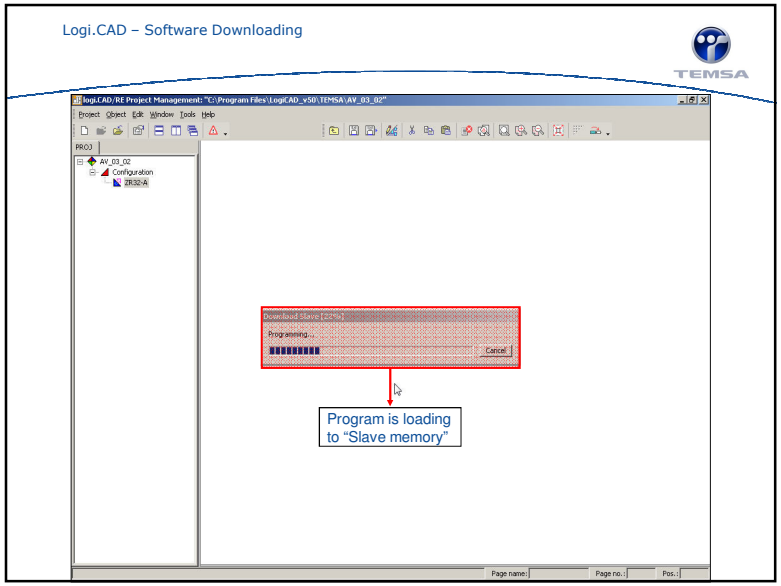

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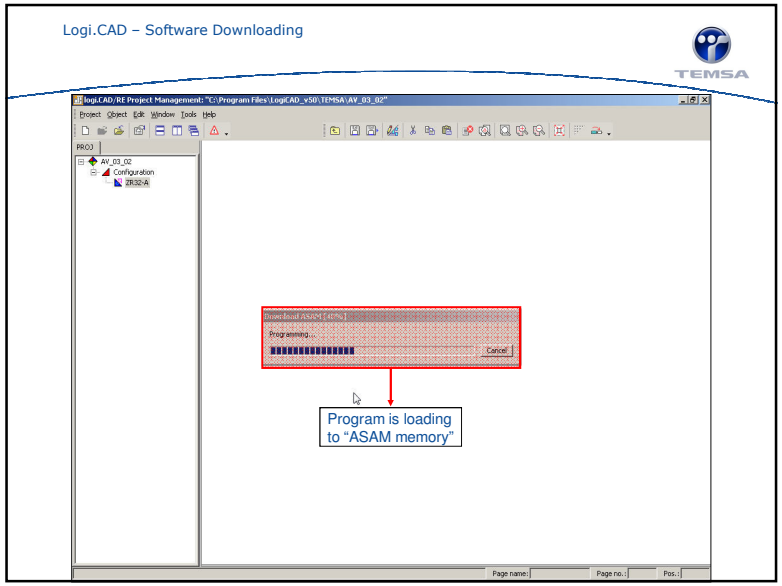

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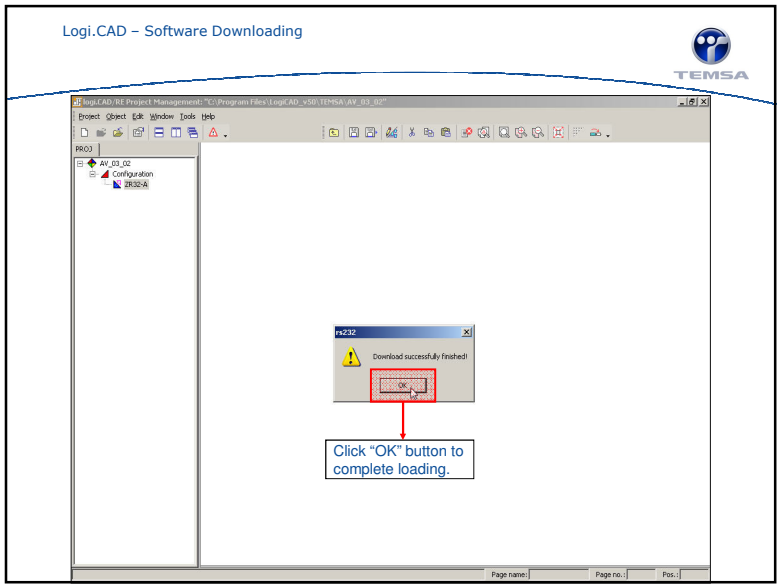

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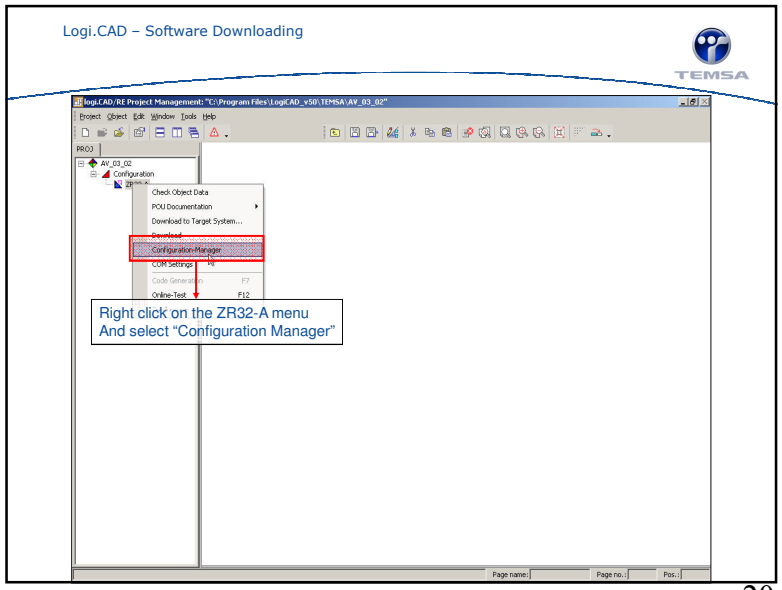

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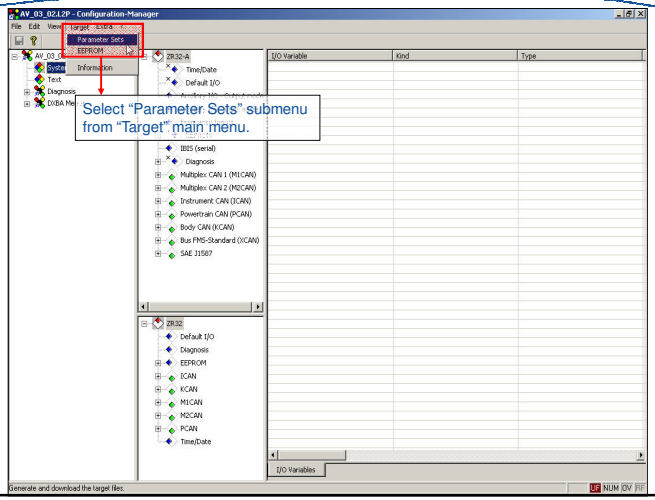

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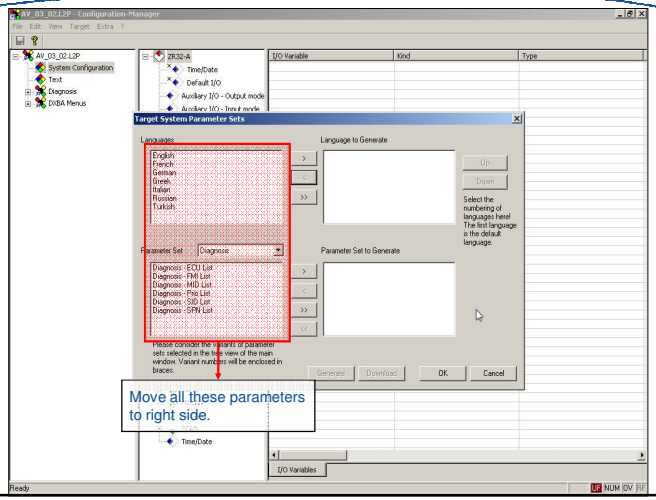

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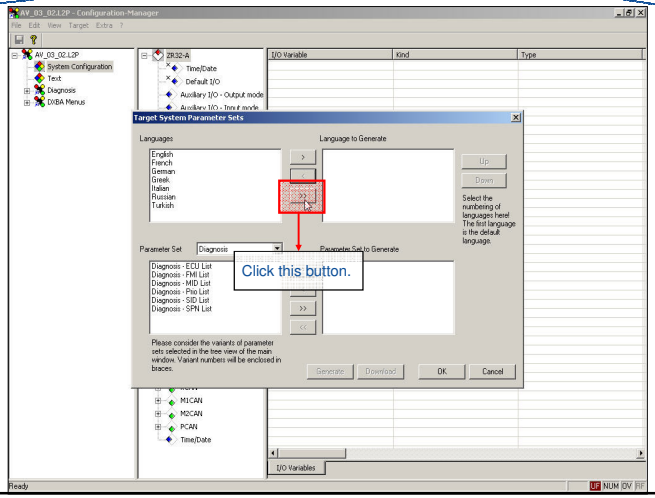

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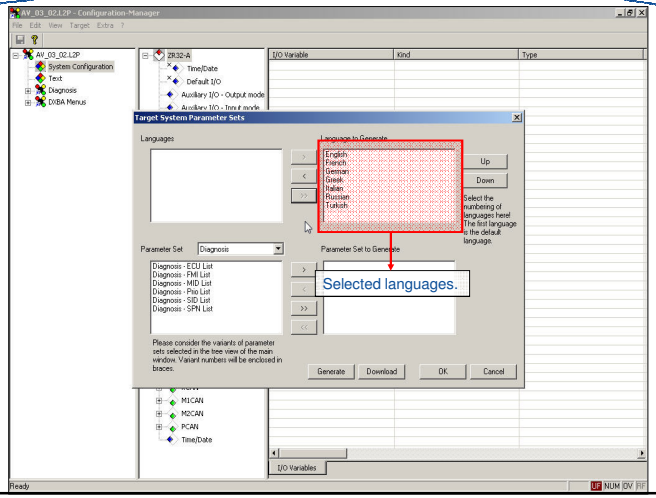

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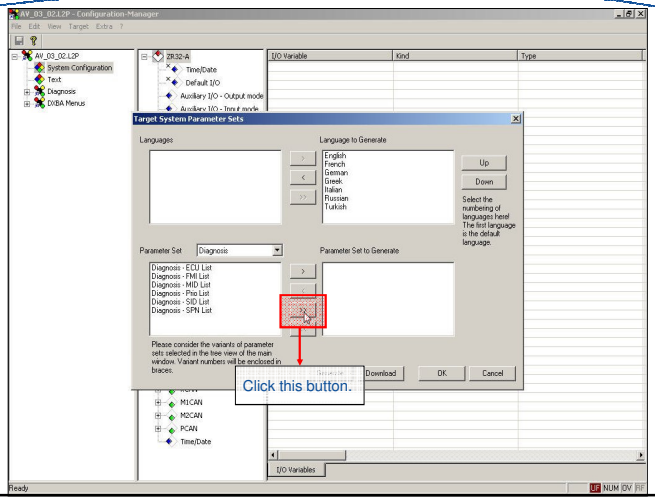

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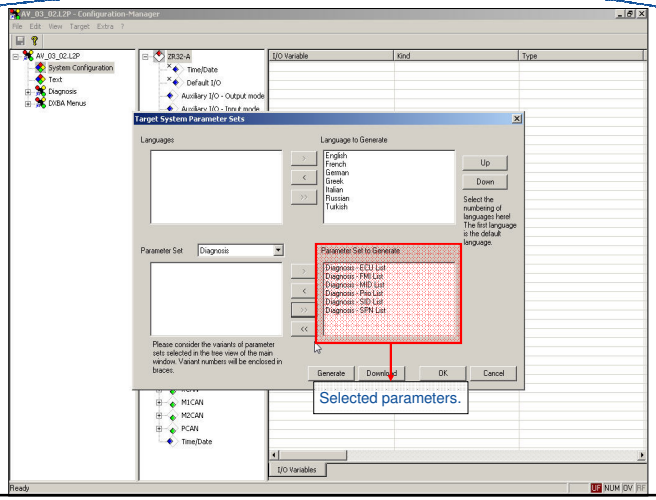

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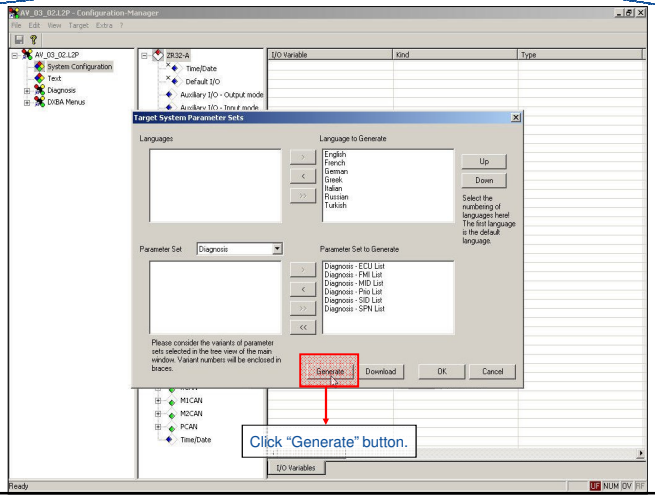

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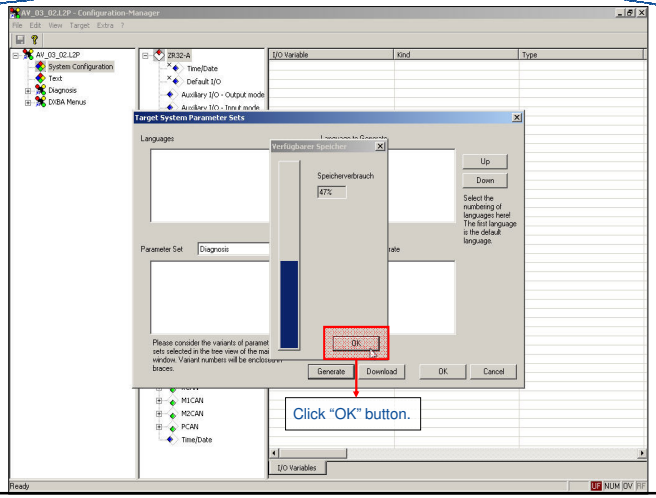

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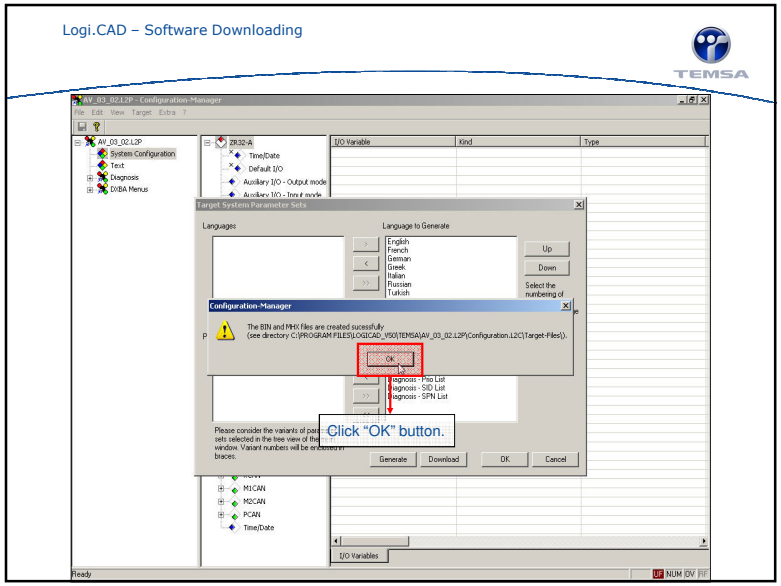

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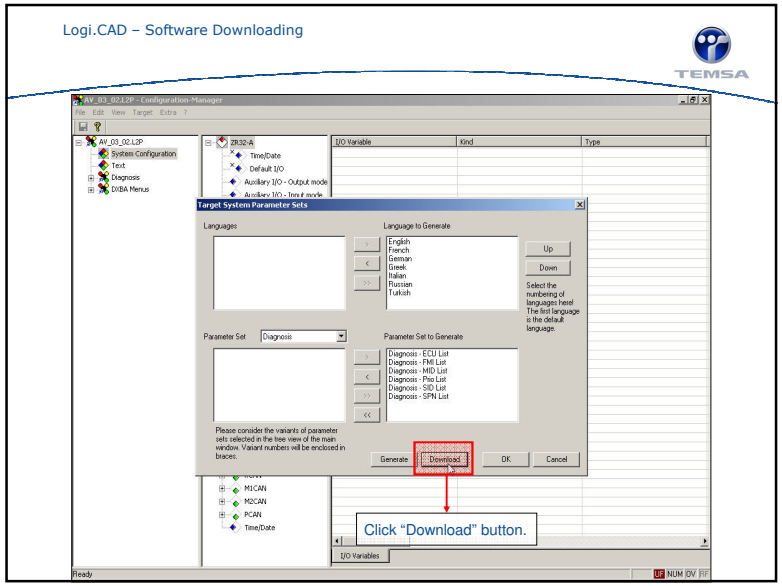

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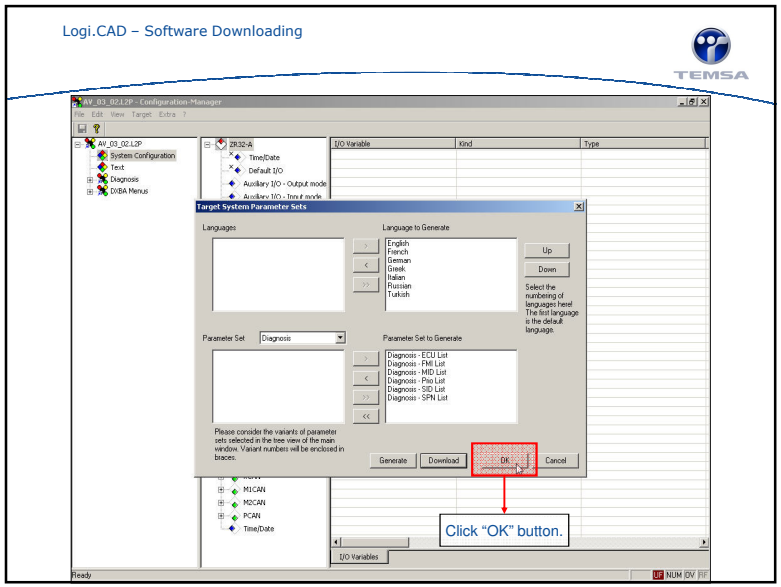

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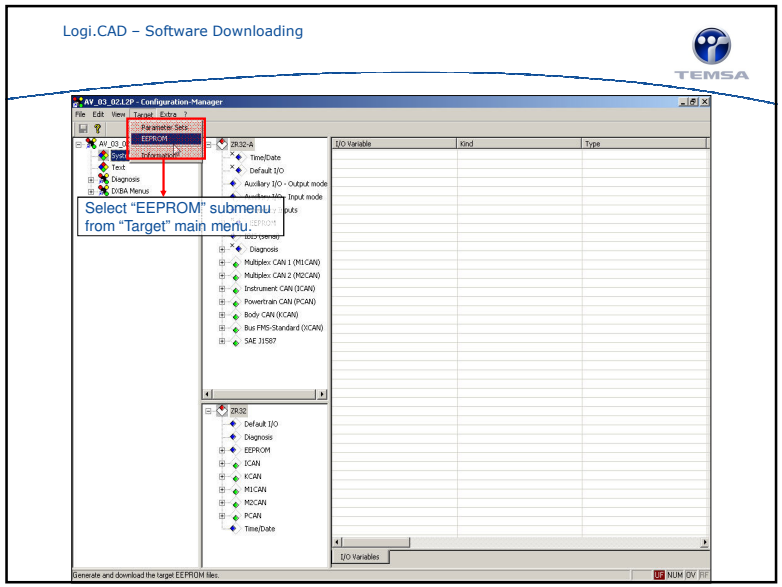

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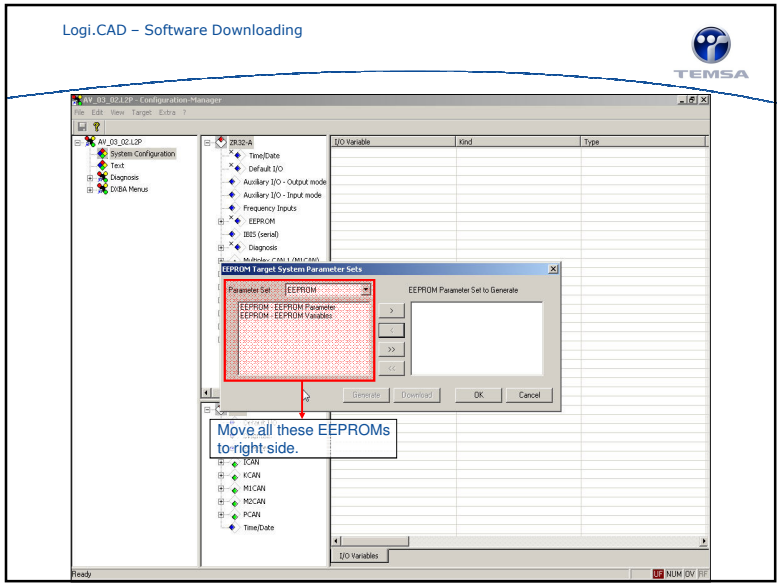

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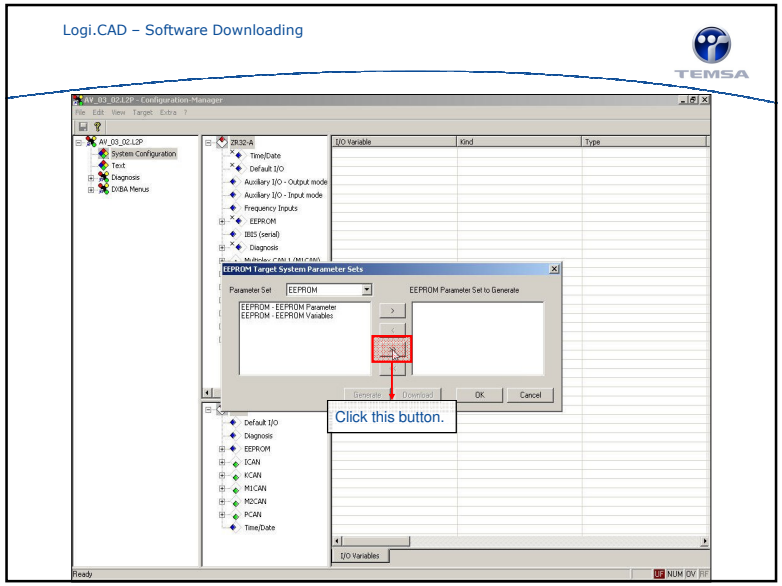

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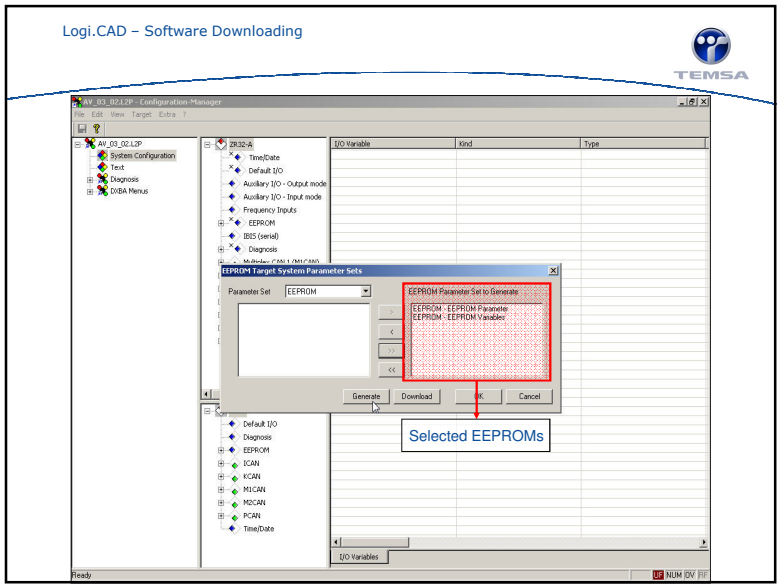

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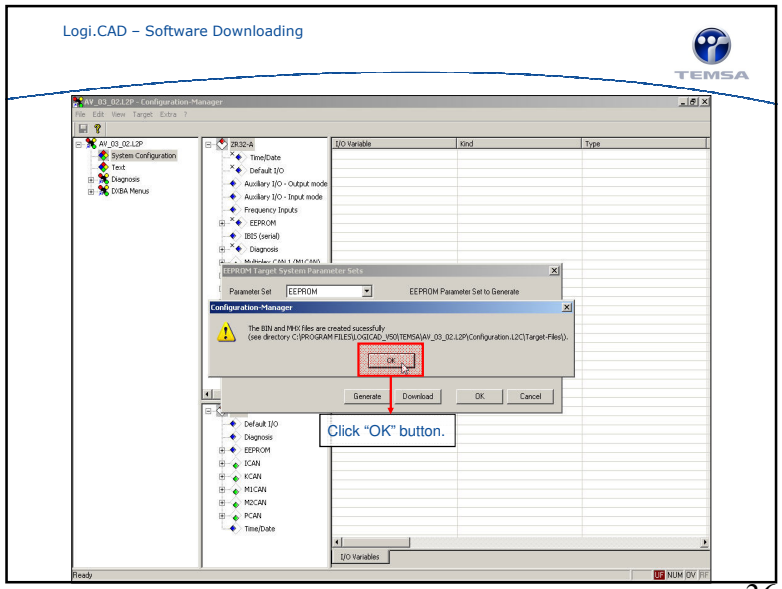

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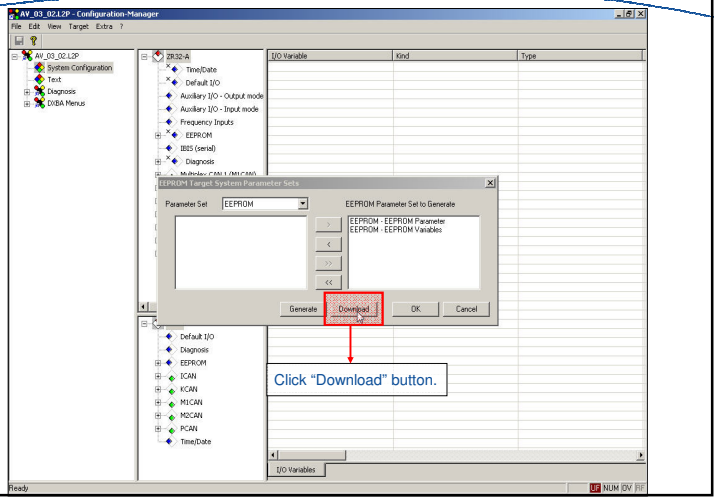

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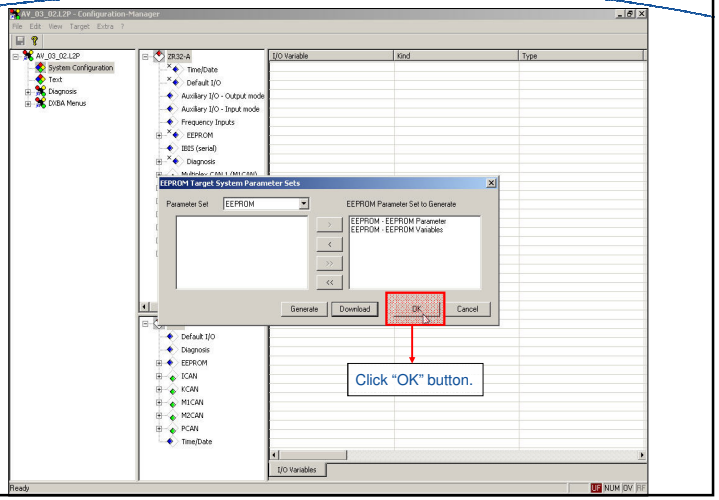

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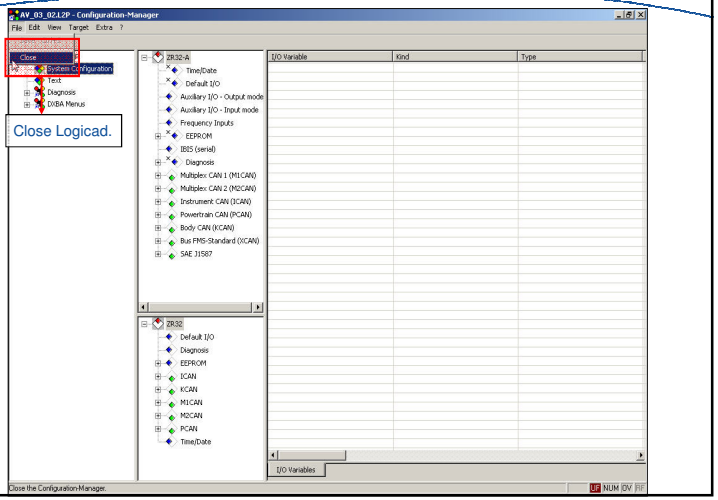

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40

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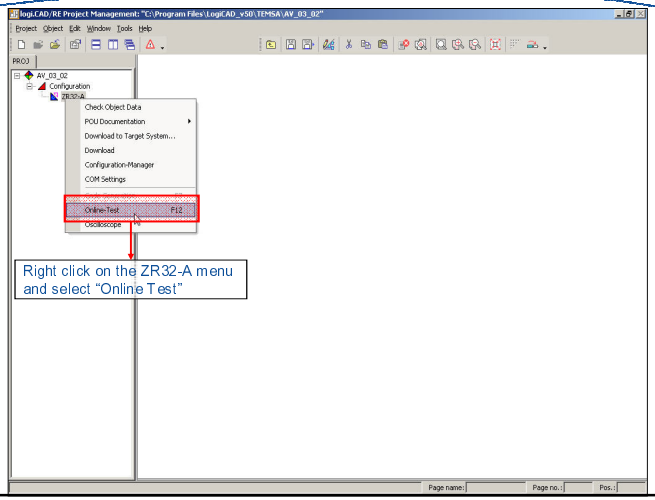

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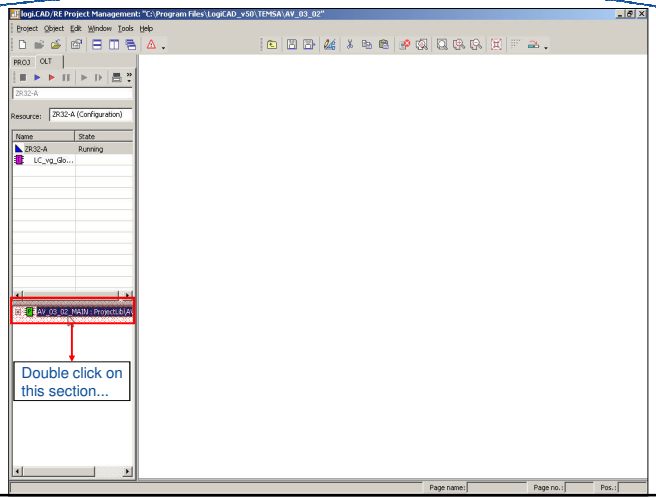

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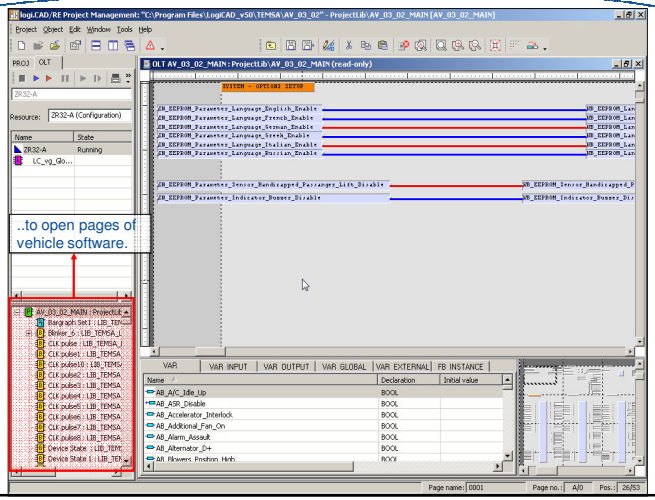

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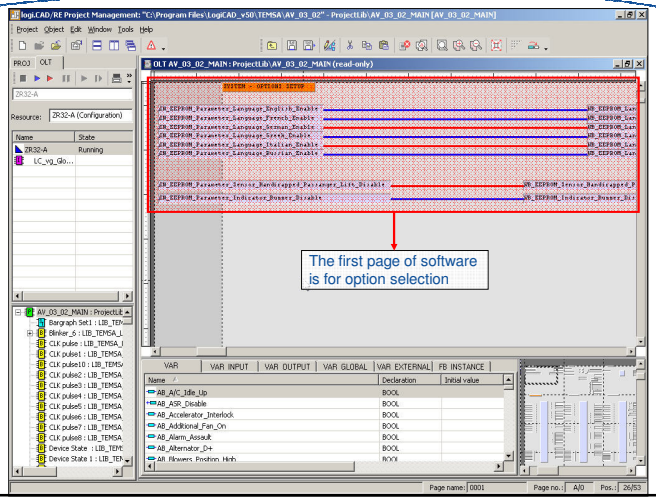

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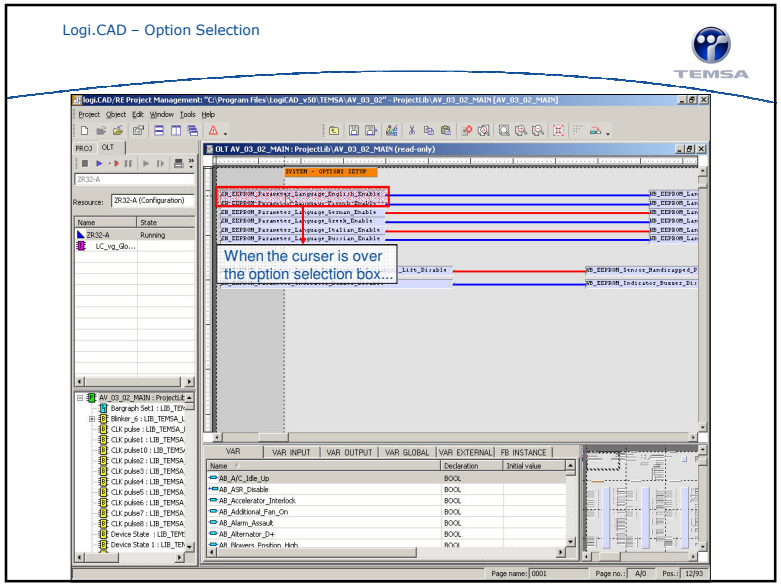

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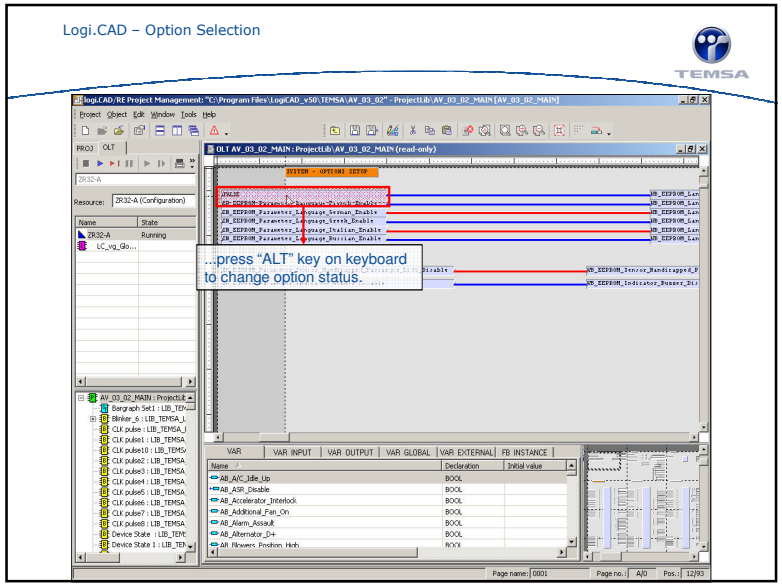

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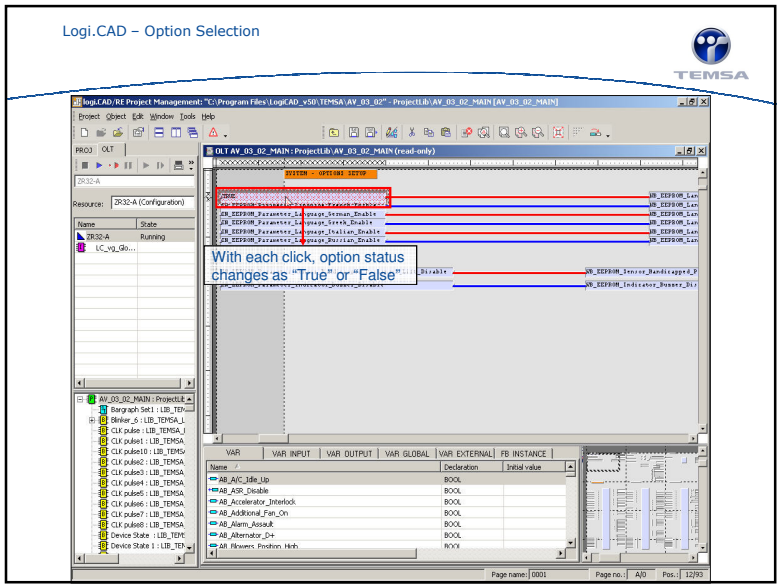

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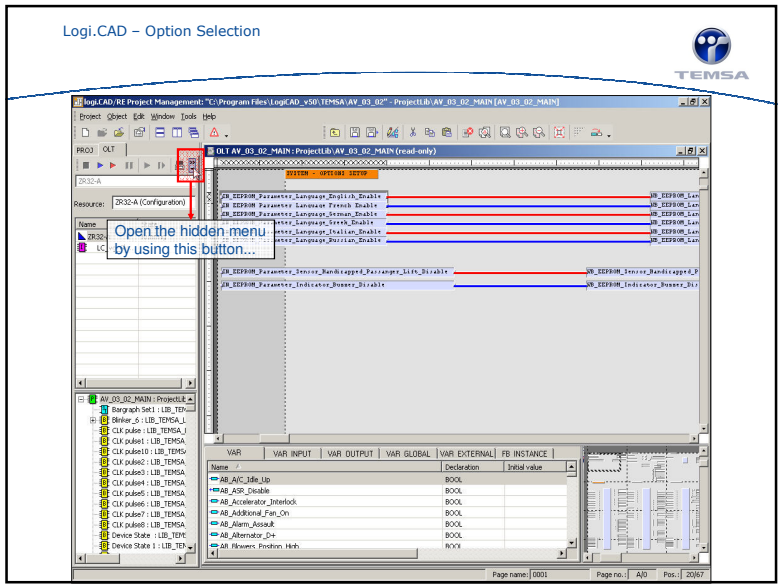

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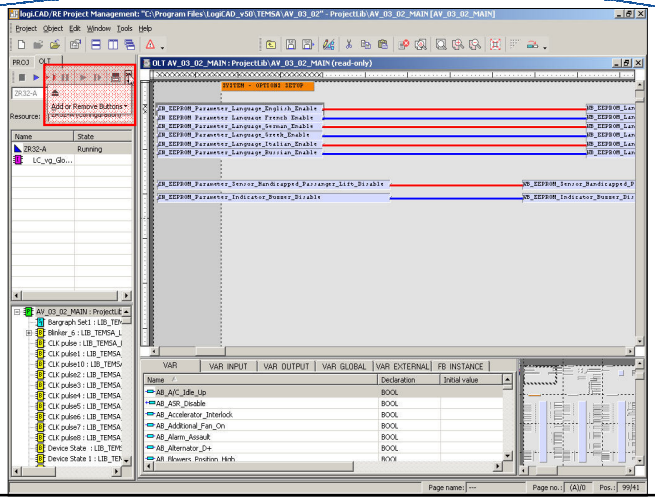

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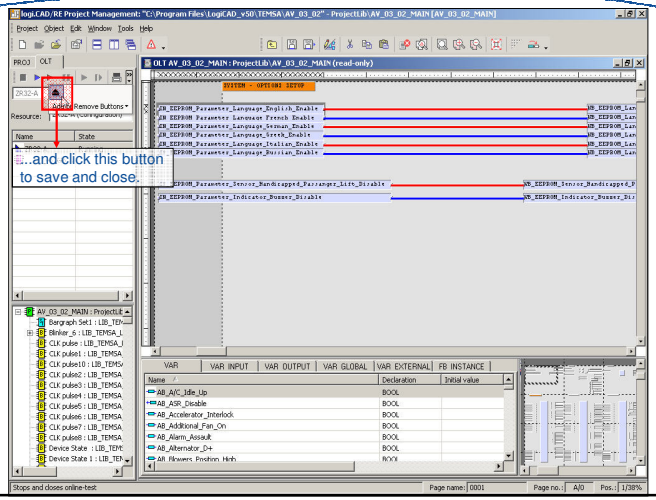

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51

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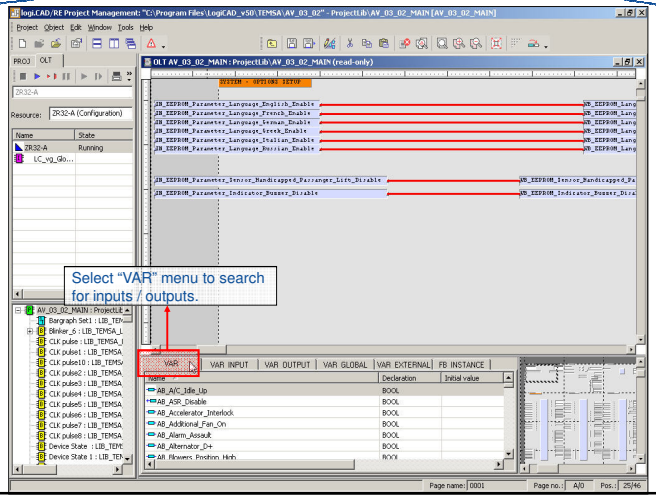

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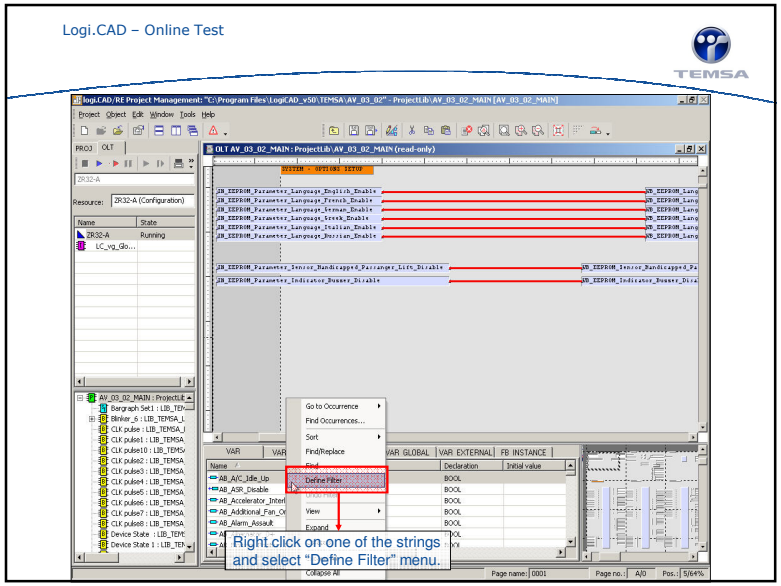

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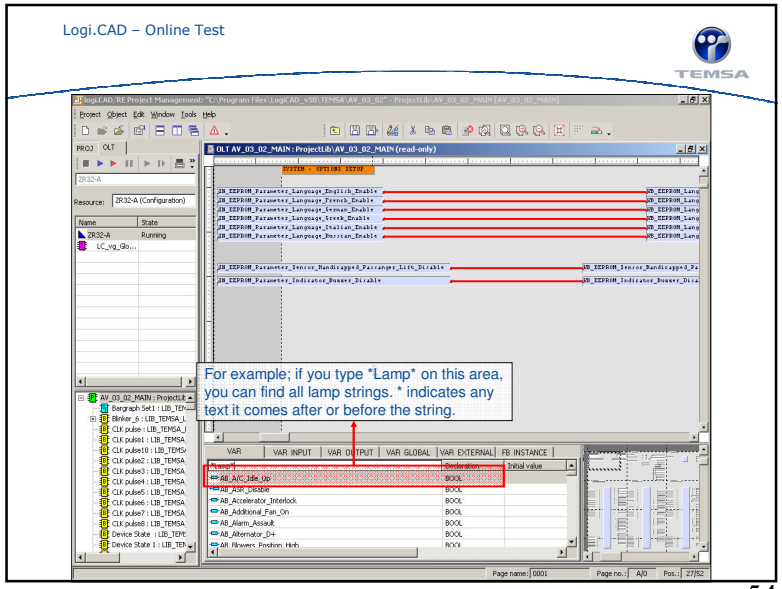

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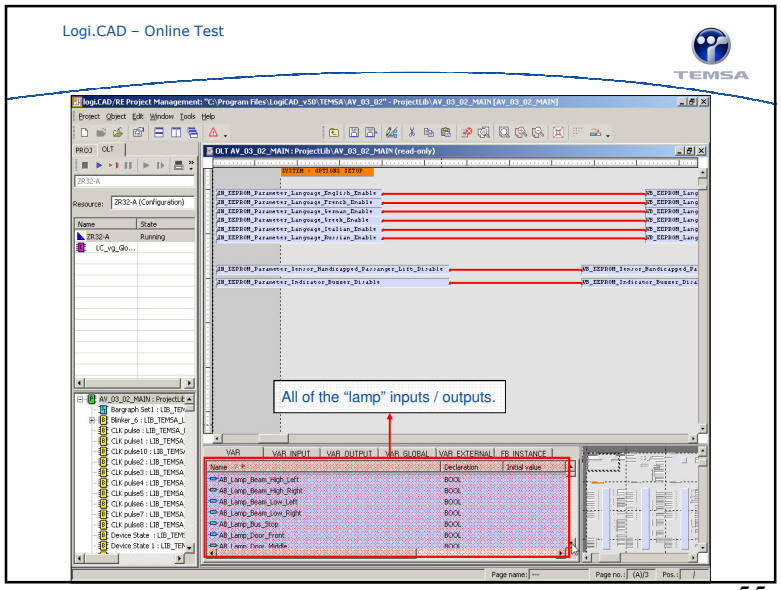

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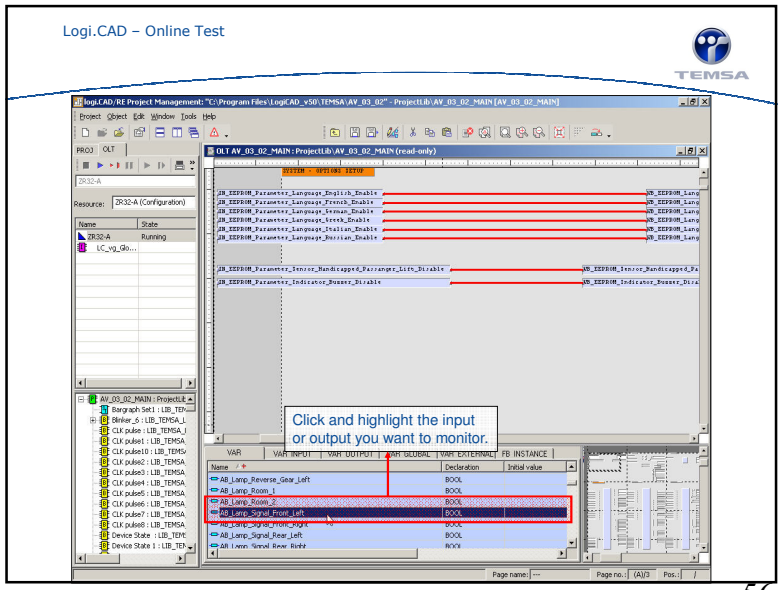

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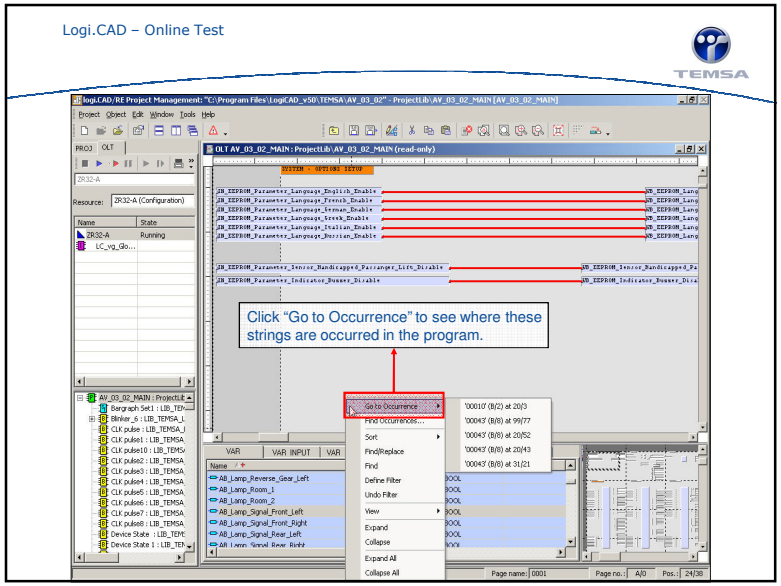

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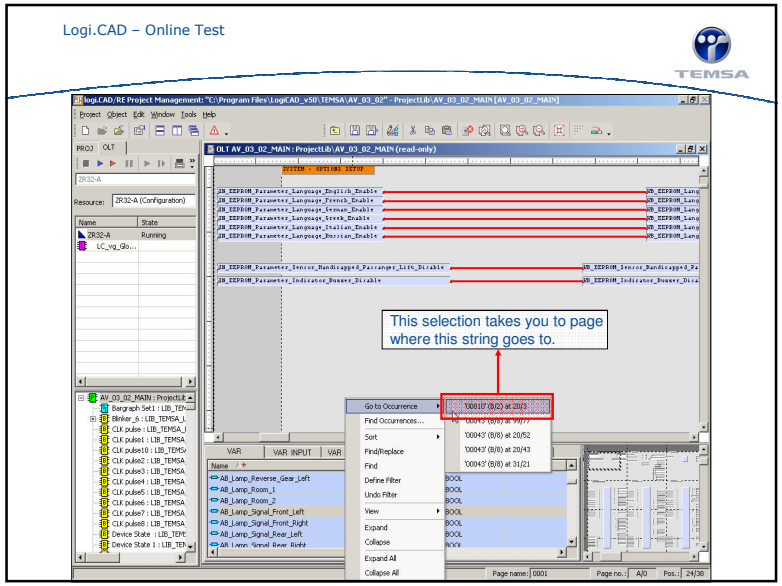

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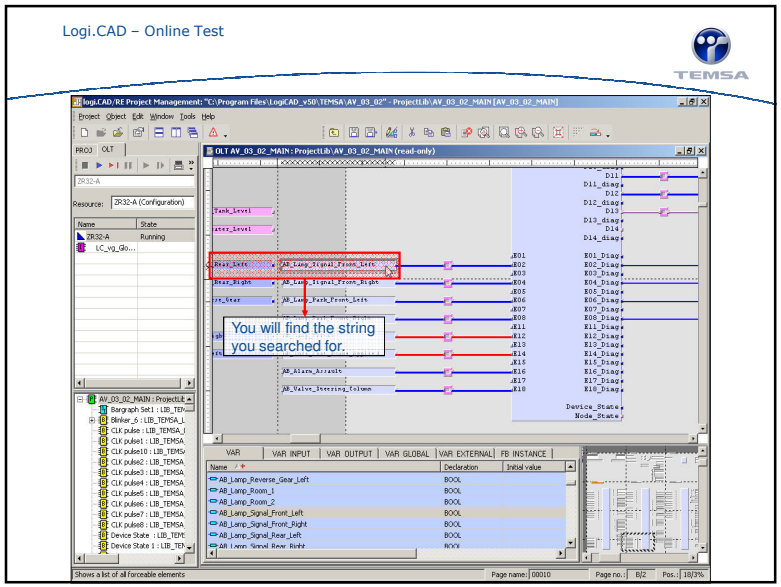

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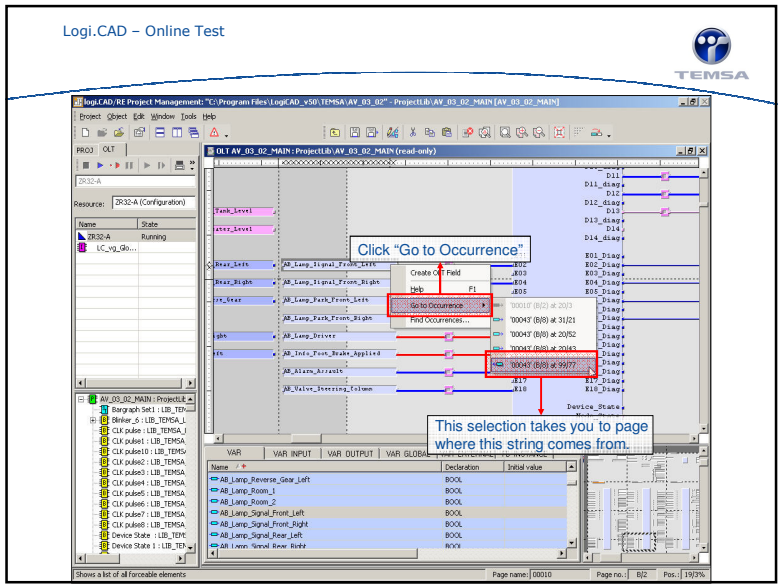

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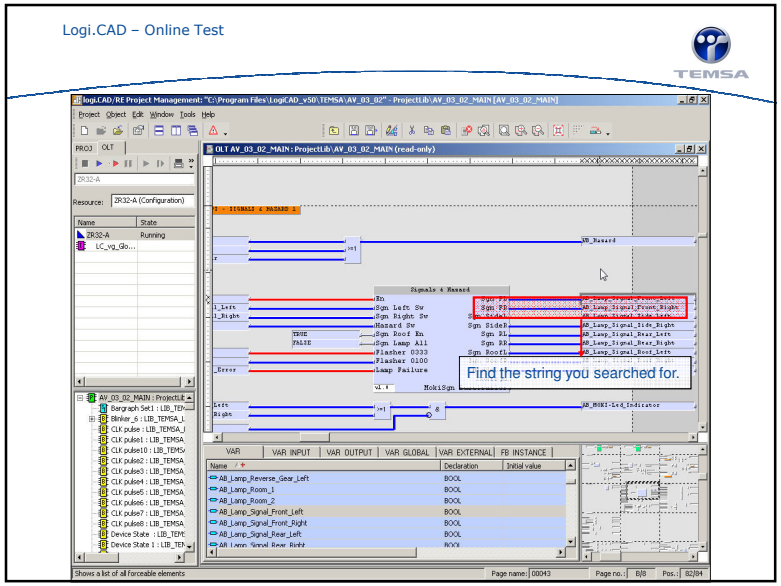

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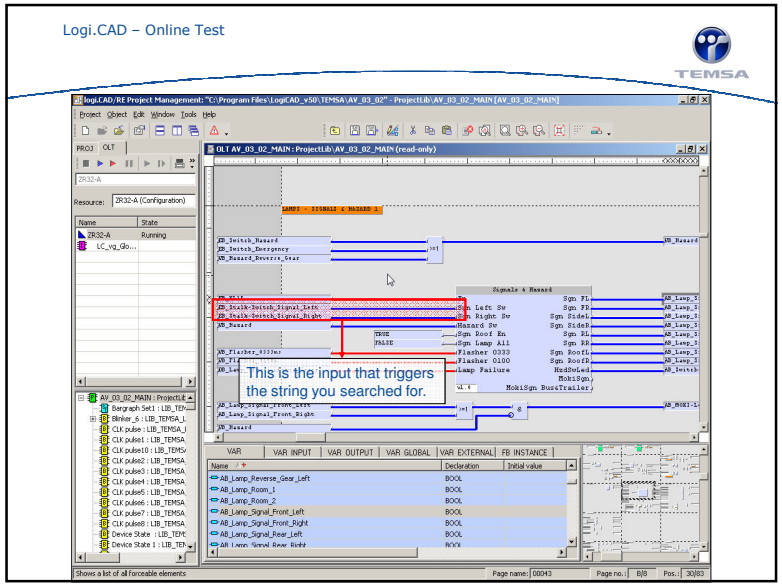

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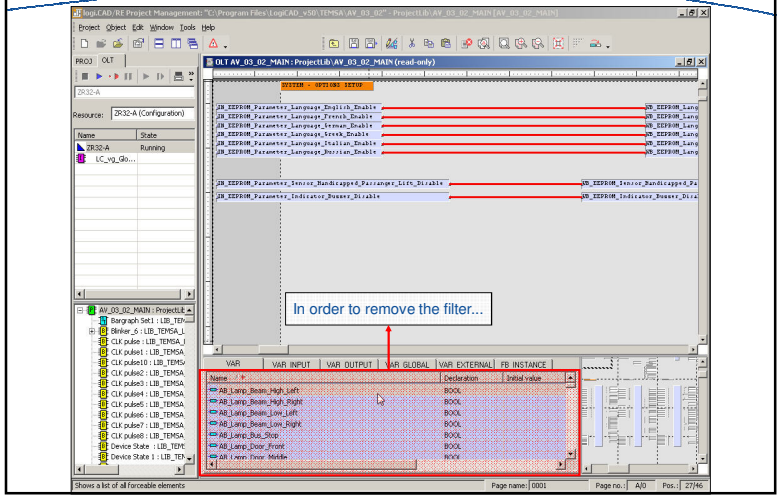

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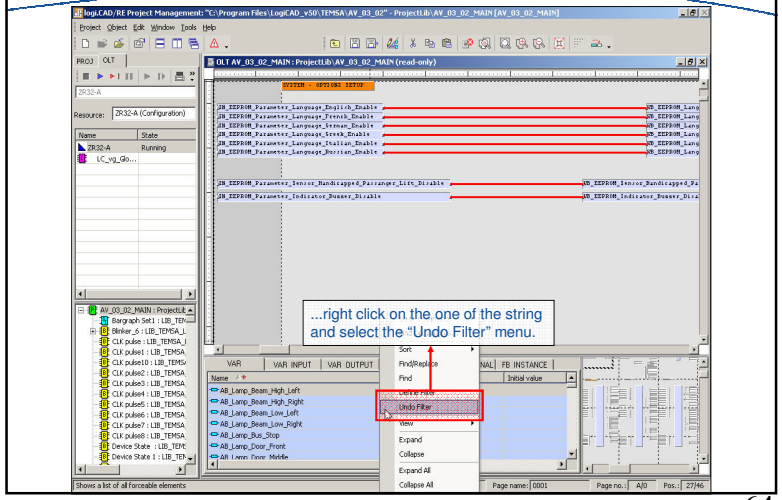

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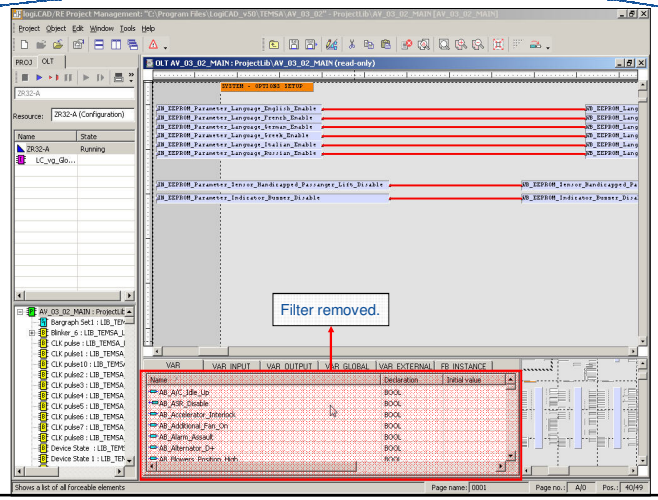

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Logi.CAD – Settings

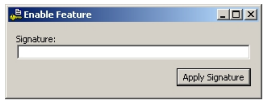
Logi.CAD

Settings

After the installation, following steps should be performed in order to complete the logicad software installation...

Important Note :

If your dongle is used firs time, program wants two enable codes.



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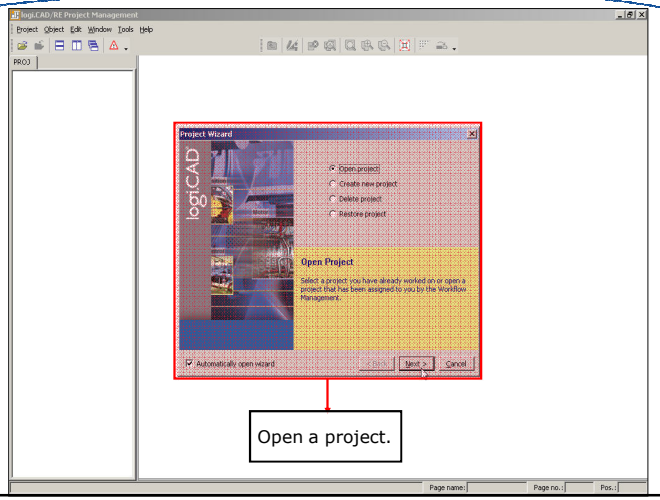
67

Logi.CAD – Settings



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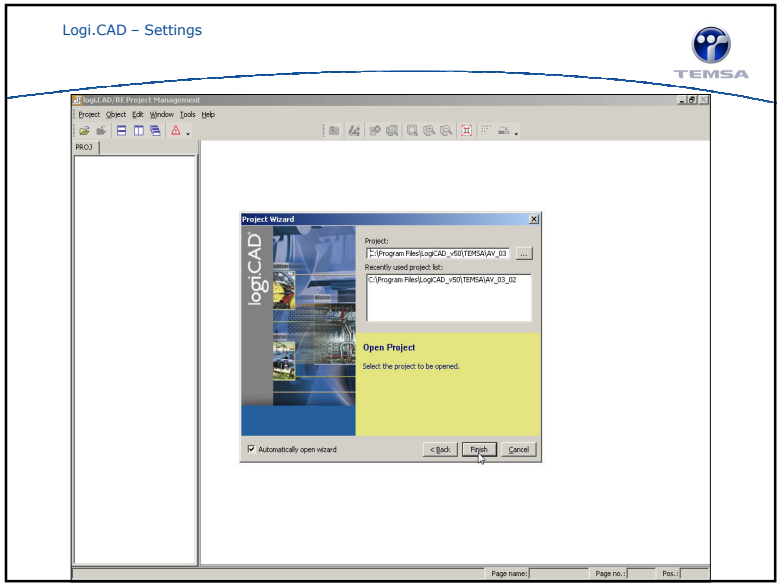
Logi.CAD – Settings



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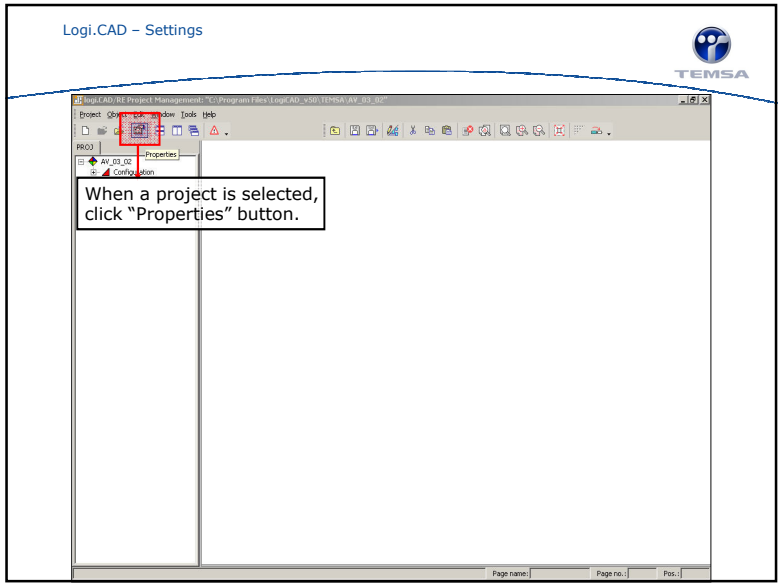

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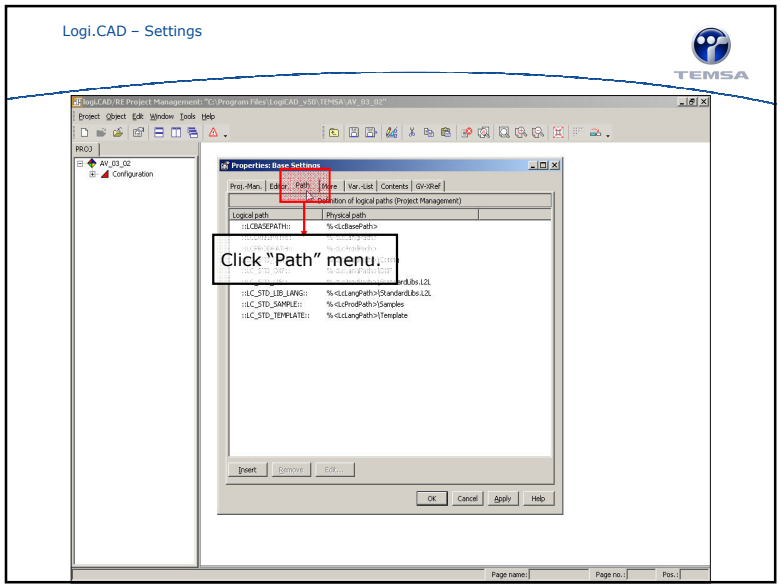

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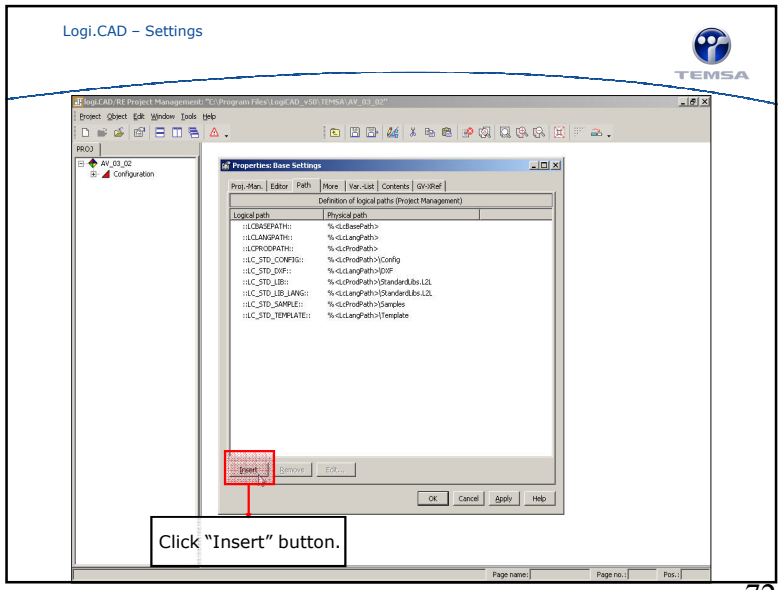

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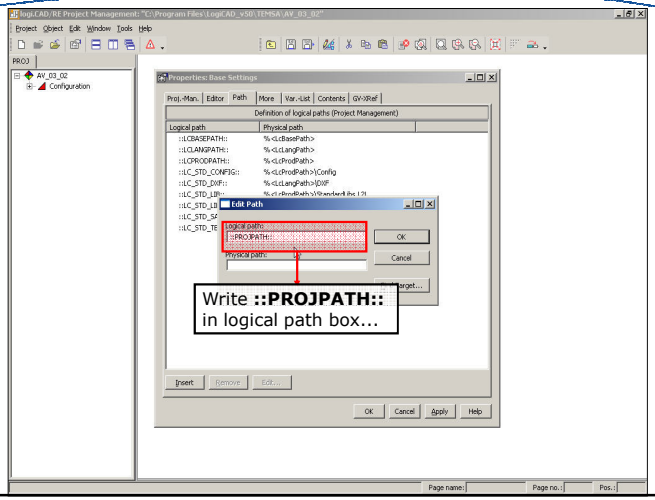

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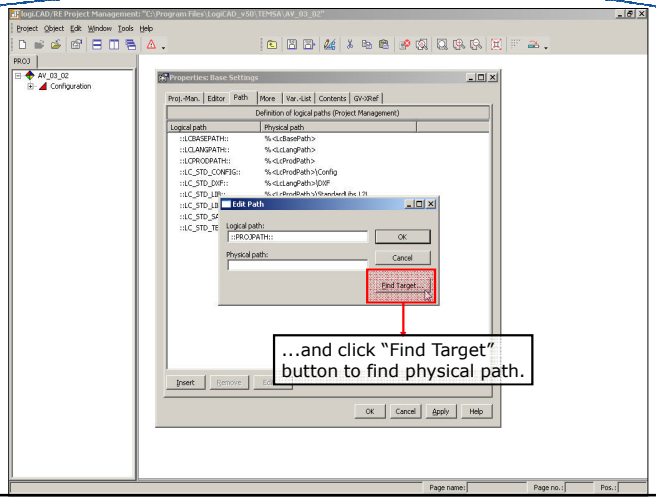

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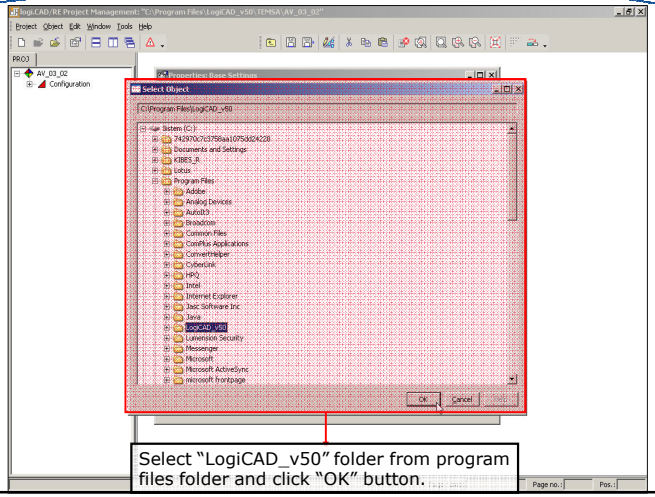

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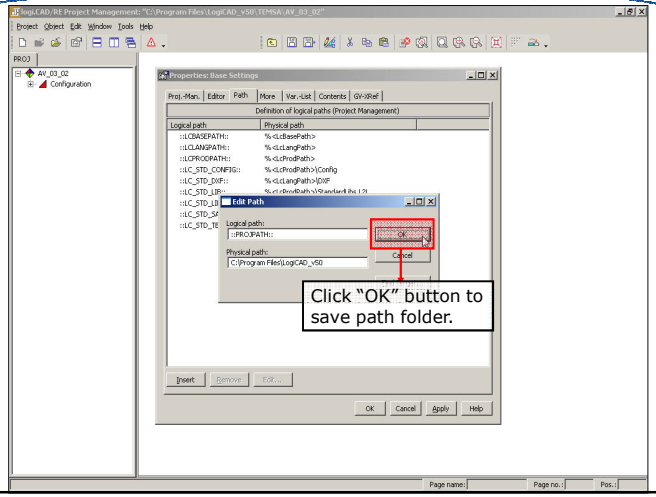

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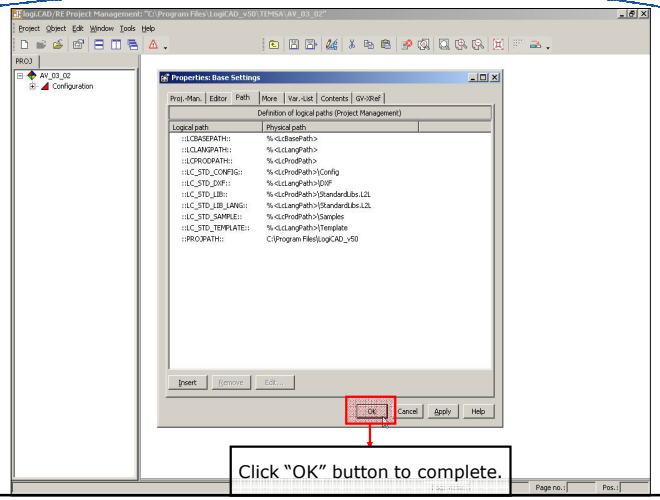

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Appendix 1/Logicad

TEMSA

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