L.E.T. Automotive N.V.
Vaartlaan 20
B-9800 Deinze
TEL: +32(0)9 381 87 87
FAX: -
EMAIL: info@let.be
WEB: WWW.LET.BE

Headlamp aiming systems

Driver assistance sensor aiming

Vision applications

LET-Project number	IDE190007
Project description	Luminoscope system LVC1050-APS-TM
Manufacturer	L.E.T. Automotive N.V. Vaartlaan 20 B-9800 Deinze
Project number	IDE190007
Responsible for project	Andy De Schrijver
Customer	DNH Manufacturing (Pty) Ltd 77 Mangold Street, Newton Park Port Elizabeth 6045 South Africa
Drawing number	IDE190007

Installation	Luminoscope headlamp aiming system	Supply from cabinet	-
Type	LVC1050-APS-TM (PLM-TM)	Main power supply	1~230VAC+PE
Location	Nissan South Africa	Frequence / Net	60Hz /16A
Quantity	1	Control voltage	24Vdc
		SPS/PLC System	-
		Year of construction	2019

Created on	19/06/2019	2.7.3	
Edit date	1/07/2019	LET	Number of pages 145

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Revision overview

Revision name	Revision comment	Reason for revision change	Page name	Revision description	Creator	Date

VAARTLAAN 20
B-9800 DEINZE
TEL:+32 (0)9 381 87 87
FAX:+32 (0)9 386 92 00
EMAIL:INFO@LET.BE

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+GRAPH/6	Graphical pages GRAPH: Compact power supply panel +A1: Exterior layout & component description (1/2)	1/07/2019	LET
+GRAPH/7	Graphical pages GRAPH: Compact power supply panel +A1: Exterior layout & component description (2/2)	1/07/2019	LET
+GRAPH/8	Graphical pages GRAPH: Compact power supply panel +A1: Interior layout & component description	1/07/2019	LET
+GRAPH/9	Graphical pages GRAPH: Layout connectorbox trolley unit Luminoscope system +A10	1/07/2019	LET
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+A1/1	Electrical panel LET +A1: arrival 230Vac power supply from Nissan South Africa, main switch & main circuit breaker	1/07/2019	LET
+A1/2	Electrical panel LET +A1: distribution 230Vac power supply	20/06/2019	LET
+A1/3	Electrical panel LET +A1: service power socket	20/06/2019	LET
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+A1/8	Electrical panel LET +A1: plugs 24Vdc power supply, RS232-interface & E-stop/start interface	20/06/2019	LET
+A1/9	Electrical panel LET +A1: plugs parallel I/O interface & RS232 interface with wheelaligner DNH	20/06/2019	LET
+A10/1	Connectorbox trolley Luminoscope +A10: 24Vdc power input, distribution & supply to APS-unit + RS232 interface Luminoscope system	28/06/2019	LET
+A10/2	Connectorbox trolley Luminoscope +A10: parallel I/O interface & connections with switch 'home-position' & optical unit LVC1050	28/06/2019	LET
+A10/3	Connectorbox trolley Luminoscope +A10: wiring canbus interface & emergency stop/start interface with thirth party	28/06/2019	LET
+A11/1	VGA-LCD screen Luminoscope +A11: wiring 12Vdc power input & VGA-graphics input	20/06/2019	LET
+A12/1	Optical unit/light box Luminoscope +A12: plugs & wiring 24Vdc power input, RS232 interface + canbus interface	28/06/2019	LET
+A12/2	Optical unit/light box Luminoscope +A12: plugs & wiring spare 12Vdc power output + VGA graphics output	20/06/2019	LET
+A12/3	Optical unit/light box Luminoscope +A12: plugs & wiring parallel I/O interface	28/06/2019	LET
+A14/1	APS-controller board +A14 Luminoscope: plugs & wiring 24Vdc power in/out + input/output Canbus interface	28/06/2019	LET
+A14/2	APS-controller board +A14 Luminoscope: wiring motor, encoder & switches L/R movement motorized trolley Luminoscope	28/06/2019	LET
+A14/3	APS-controller board +A14 Luminoscope: wiring encoder & switches U/D movement motorized column + signaltower Luminoscope	20/06/2019	LET
+A14/4	APS-controller board +A14 Luminoscope: wiring motor with brake U/D movement motorized column Luminoscope + plug 'Hold APS' & RS232 programmation plug	20/06/2019	LET
+A14/5	APS-controller board +A14 Luminoscope: wiring emergency stop button & start button controlbox Luminoscope	28/06/2019	LET
+A14/6	APS-controller board +A14 Luminoscope: plugs input signals APS-board & connection with pushbuttons controlbox Luminoscope	20/06/2019	LET
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+CABLE/29	CAB: Cable interconnection diagram	20/06/2019	LET
+CABLE/30	CAB: Cable interconnection diagram	20/06/2019	LET
+BOM/1	BOM: List bill of material	1/07/2019	LET
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VAARTLAAN 20
B-9800 DEINZE
TEL:+32 (0)9 381 87 87
FAX:+32 (0)9 386 92 00
EMAIL:INFO@LET.BE

Structure identifier overview (Location overview)

Full designation	Structure description
+INF	General information
+GRAPH	Graphical layout drawings
+A1	Compact electrical panel
+A10	Connectorbox trolley unit Luminoscope system LVC1050-APS-TM
+A11	VGA-LCD screen Luminoscope system LVC1050-APS-TM
+A12	Optical unit Luminoscope system LVC1050-APS-TM
+A14	APS controller unit Luminoscope system LVC1050-APS-TM
+CLIENT	Provisions customer (power supply)
+WAM	Electrical panels wheel alignment machine DNH
+TERM	Terminal strip overview & connection diagrams
+PLUG	Plug/Connector strip overview & connection diagrams
+CABLE	Cable summary & connection diagrams
+BOM	List bill of material

L.E.T. AUTOMOTIVE
VAARTLAAN 20
B-9800 DEINZE
TEL:+32 (0)9 381 87 87
FAX:+32 (0)9 386 92 00
EMAIL:INFO@LET.BE

IDENTIFICATION SYSTEMS

COMPONENT/DEVICE IDENTIFICATION SYSTEM

DRAWING NUMBER	=	LOCATION	+	BMK (PAGE/PAD)
XXXXXXXXX		+A14		-14S3
LET-PROJECTNUMBER		APS UNIT		SWITCH UNIT DRAWN ON PAGE 14/PATH 3

CABLE IDENTIFICATION SYSTEM

W=A10-XS100/A14-XS100.1

- BMK (COMPONENT CODE) FOR CABLES
- STRUCTURAL LOCATION AND DEVICE CODE INITIAL START OF CABLE
- STRUCTURAL LOCATION AND DEVICE CODE ARRIVAL OF CABLE

TERMINALSTRIP IDENTIFICATION SYSTEM

+A1-XL1

- STRUCTURAL LOCATION CODE FROM THE TERMINAL STRIP
- BMK (COMPONENT) FOR TERMINAL STRIPS
- SEQUENTIAL NUMBER

EPLAN CROSS-REFERENCE IDENTIFICATION QSYSTEM

POWER WIRING

+A1-230 L1 . 1

- STRCUTURAL LOCATION CODE
- VOLTAGE (400VAC,230VAC,24VAC, 24VDC)
- SEQUENTIAL NUMBER
- SUB-SEQUENTIAL NUMBER

CONTROL WIRING

+A1-XS100. 2: 1

ALL REFERENCES
FROM PIN/TERMINAL NUMBER
TO PIN/TERMINAL NUMBER

IDENTIFICATION SYSTEMS

MARKING DEVICES

COMPONENT : 1x SELF-ADHESIVE LABEL LOCATED ABOVE THE COMPONENT PHOENIX CONTACT TYPE EMLP (20X8)

TERMINAL STRIPS : GROUP MARKER CARRIER FOR SNAPPING INTO END STOPS PHOENIX CONTACT TYPE KLM
+LABELING INSERT MARKER PHOENIX CONTACT TYPE US-EMP (25x6MM)

TERMINALS : MARKER FOR TERMINAL BLOCKS PHOENIX CONTACT TYPE UCT-TM 5

CABLES : MARKED AT BOTH ENDS WITH PLASTIC CABLE MARKER PHOENIX CONTACT TYPE KMK2
+LABELING INSERT MARKER PHOENIX CONTACT TYPE US-EMP (29x8MM)

WIRING/CABELCORE : FOR CABLEHOLDER PHOENIX CONTACT TYPE PATG WITH TARGET MARKING (PLACE OF INSTALLATION + BMK)
LABELING INSERT MARKER PHOENIX CONTACT TYPE US-WMT (23x4MM)
CONDUCTOR MARKER CARRIER PHOENIX CONTACT TYPE PATG 1/23 : WIRE SECTION 1,5-2,5MM
CONDUCTOR MARKER CARRIER PHOENIX CONTACT TYPE PATG 2/23 : WIRE SECTION 2-4MM

WIRE COLORS IN ENCLOSURES

DESCRIPTION CIRCUIT	POTENTIAL	WIRE COLOR	WIRE SECTION
PRIMARY CIRCUITS 400/220VAC	L1/L2/L3	BLACK	MIN. 1.5mm²
NEUTRAL WIRE	N	LIGHT BLUE	MIN. 1mm²
EQUIPMENT GROUNDING CONDUCTOR	PE	GREEN/YELLOW	MIN. 1mm²
CONTROL CIRCUITS	230 VAC	RED	MIN. 1mm²
CONTROL CIRCUITS	24VAC	RED	MIN. 1mm²
CONTROL CIRCUITS	0 VAC	RED	MIN. 1mm²
CIRCUITS UPSTREAM DISCONNECT SWITCH	L1/L2/L3	ORANGE	MIN. 1.5mm²
CONTROL CIRCUITS	24VDC	DARK BLUE	MIN. 1mm²
CONTROL CIRCUITS	0 VDC	DARK BLUE	MIN. 1mm²
INTERLOCK CIRCUITS	-	ORANGE	MIN. 1mm²

COLORS ABBREVIATIONS

COLOR ABBREVATION	COLOR	COLOR ABBREVATION	COLOR
BN	BROWN	VI	VIOLETT
RD	RED	GY	GRAY
PK	PINK	WH	WHITE
YE	YELLOW	BK	BLACK
GN	GREEN	GNYE	GREEN/YELLOW
BU	BLUE	TQ/LIGHT BU	LIGHT BLUE
OG	ORANGE	DARK BU	DARK BLUE

TERMINAL SIZES

DESCRIPTION CIRCUIT	POTENTIAL	WIRE COLOR
PRIMARY POWER CIRCUITS 400VAC	L1/L2/L3/N	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series GREY
GROUNDING PRIMARY POWER CIRCUITS 400/220VAC	PE	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series GREEN-YELLOW
POWER CIRCUITS UPSTREAM DISCONNECT SWITCH	L1/L2/L3/N	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series GREY
CONTROL CIRCUITS	230 VAC	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series GREY
CONTROL CIRCUITS	24 VAC	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series GREY
CONTROL CIRCUITS	0 VAC	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series GREY
CONTROL CIRCUITS	24 VDC	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series GREY
CONTROL CIRCUITS	0 VDC	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series GREY
GROUNDING PRIMARY CONTROL CIRCUITS	PE	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series GREEN-YELLOW
INTERLOCK CIRCUITS	L1/L2/L3	0.08-2.5mm²-TERMINALS Phoenix Contact ST-Series ORANGE

BMK (COMPONENT IDENTIFICATION) / LOCATION

(The components in the enclosures will be marked with LUTZE CS1)

PURPOSE OF COMPONENT	IDENTIFICATION CHARACTER	EXAMPLE
FUNCTIONAL ELEMENTS	A	PANELS, BOXES, KEYBOARDS, MOUSE, COMPUTER
ELECTRIC AND NON-ELECTRIC LEVEL CONVERTERS	B	ENCODER, SENSORS
CAPACITORS	C	PHOTO-ELECTRIC CEL
BINARY ELEMENTS	D	/
LIGHTING FIXTURES	E	HEATER, CABINET ILLUMINATION
PROTECTION DEVICES/FUSES	F	FUSES, CIRCUIT BREAKER
POWER SOURCES	G	BATTERY, POWER SUPPLY UNIT
SIGNALISATIONS	H	SIGNAL LAMP, LED, ACOUSTICAL SIGNAL DEVICE
RELAY DEVICES	K	RELAY, CONTACTOR RELAY
INDUCTORS/COILS	L	SPOOL
MOTORS	M	LINEAR MOTOR, DC-MOTOR, AC-MOTOR
REGULATING DEVICES	N	/
MEASUREMENT INSTRUMENTS	P	VOLT METER, WATT METER
DISCONNECT DEVICES	Q	MAIN SWITCH, FUSED DISCONNECTOR
RESISTORS	R	SHUNT, RESISTOR
SWITCHES	S	PUSHBUTTON, SELECTOR SWITCH
TRANSFORMERS	T	POWER TRANSFORMER, MEASURING TRANSFORMER
FREQUENCY CONVERTOR	U	DEMODULATOR, FREQUENCY CONVERTOR
RECTIFIERS/DIODES	V	DIODE, TRANSISTOR
CONDUCTING DEVICES	W	CABLE, CONDUCTOR
TERMINALS, CONNECTORS	X	CONNECTOR, PLUG CONNECTOR TEMRINAL STRIPS
MECHANICAL DEVICES	Y	VALVE, PLUG CONNECTOR TERMINAL STRIPS
FILTERS & SUPRESSORS	Z	/

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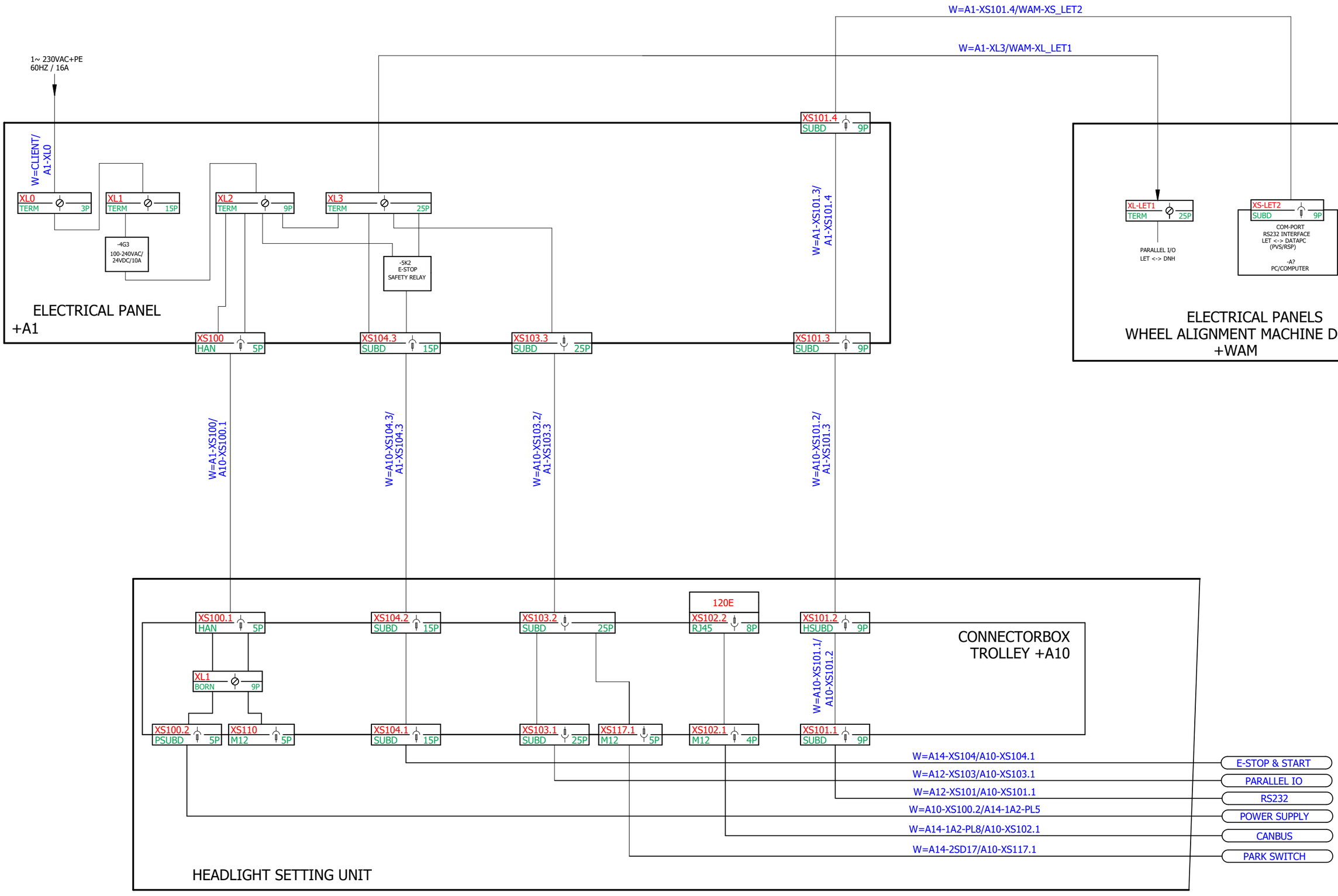
BMK (COMPONENT IDENTIFICATION) / LOCATION

For an unique identification; the following elements are forseen from a sub-characater

CHARACTER	ADD-ON	PURPOSE OF COMPONENT
S		SWITCH (GENERAL)
S	E	PROXIMITY SWITCH
S	D	MECHANICAL ACTIVATED SWITCH
S	L	ILLUMINATED SWITCH
S	N	EMERGENCY STOP SWITCH
S	P	PROGRAMMABLE SWITCH
S	W	SELECTORSWITCH
X		CONNECTION DEVICE (GENERAL)
X	L	TERMINAL STRIP
X	S	CONNECTION PLUG



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OPTICAL UNIT LVC1050 +A12

24VDC INPUT	RS232	CANBUS	PARALLEL I/O	12VDC OUTPUT	VGA PORT
XS100.3 CAN 2P	XS101 SUBD 9P	XS102 M12 4P	XS103 SUBD 25P	XS104 M12 3P	XS105 VGA 15P

W=A14-1A2-PL4/ A12-XS100.3

W=A12-XS101/ A10-XS101.1

W=A12-XS102/ A14-1A2-PL7

W=A12-XS103/ A10-XS103.1

W=A12-XS104/ A11-XS104.1

W=A12-XS105/ A11-XS105.1

LCD SCREEN +A11

POWER IN	VGA IN
XS104.1 JACK 2P	XS105.1 VGA 15P

RS232

PARALLEL I/O

CANBUS

PARK SWITCH

W-A14-1A2-PL8/ A10-XS102.1

HEADLIGHT SETTING UNIT

APS CONTROLLERBOX +A14

PL22 FTC 20P	PL23 S300 3P	PL6 S300 3P	PL4 PH 2P	PL7 RJ10 4P	PL8 RJ10 4P
HEIGHT DETECTION	HOLD APS	RS232 PROGRAM.	POWER	CANBUS INPUT	CANBUS OUTPUT

APS CONTROLLER BOARD 090338C -1A2

POWER IN	ENCODER U/D	MOTOR U/D	IO UP/DOWN	INPUTS 1-8	OUTPUTS 1-8	START/E-STOP	INPUTS 9-16	OUTPUTS 9-16	MANUAL U/D/L/R	MOTOR L/R	ENCODER L/R	ZERO PX L/R	LIMIT L/R
PL5 PHNX 3P	PL13 JST 10P	PL15 PHNX 4P	PL14 300S 14P	PL16 JST 10P	PL18 JST 10P	PL1 S300 8P	PL17 JST 10P	PL19 JST 10P	PL30 S300 6P	PL12 PHNX 2P	PL9 JST 10P	PL10 S300 3P	PL11 S300 4P

E-STOP & START

POWER SUPPLY

W=A10-XS100.2/ A14-1A2-PL5

W=A14-1A2-PL13/ A14-3B2-PL13.1

W=A14-1A2-PL15/ A14-4M2-PL15.1

W=A14-1A2-PL14/A14-3SE8

W=A14-1A2-PL14/A14-3SD10

W=A14-1A2-PL14/A14-3SD14

W=A14-1A2-PL14/A14-3H16

W=A14-XS104/ A10-XS104.1

W=A14-1A2

W=A14-1A2-PL12/ A14-2M14

W=A14-1A2-PL9/ A14-2B1-PL9.1

W=A14-1A2-PL10/ A14-2SE6-PL10.1

W=A14-1A2-PL11/ A14-12SD10

W=A14-2SD17/ A10-XS117.1

PL13.1 JST 10P — +A14-3B1 — ENCODER U/D

PL15.1 BRNDY 6P — +A14-4M2-YB1 BRAKE — +A14-4M2-M1 MOTOR U/D

+A14-3SE8 — ZERO PX U/D

+A14-3SD10 — LIM UP

+A14-3SD14 — LIM DOWN

-H1 RED : EM.STOP
-H2 GREEN : PARK
-H3 AIM OK
SIGNALTOWER +A14-3H16

PILZ CONTACT

XS104 BNDY 12P

-5SN4 E-STOP
-5SL6 RESET START
-6S11 NEXT/ MOVE
-6SL13 REAIM LAMP
-6S14 ABORT CYCLE
-8S5 MANUAL UP
-8S6 MANUAL DOWN
16S15 VALIDATE ADJUST.

+A14-2M14 — MOTOR L/R

PL9.1 AMP 5P — +A14-2B1 — ENCODER L/R

PL10.1 M12 4P — +A14-2SE6 — ZERO PX L/R

+A14-2SD10 — LIMIT L/R

+A14-2SD17 — PARK SWITCH

POSITIONING MAST

TROLLEY UNIT

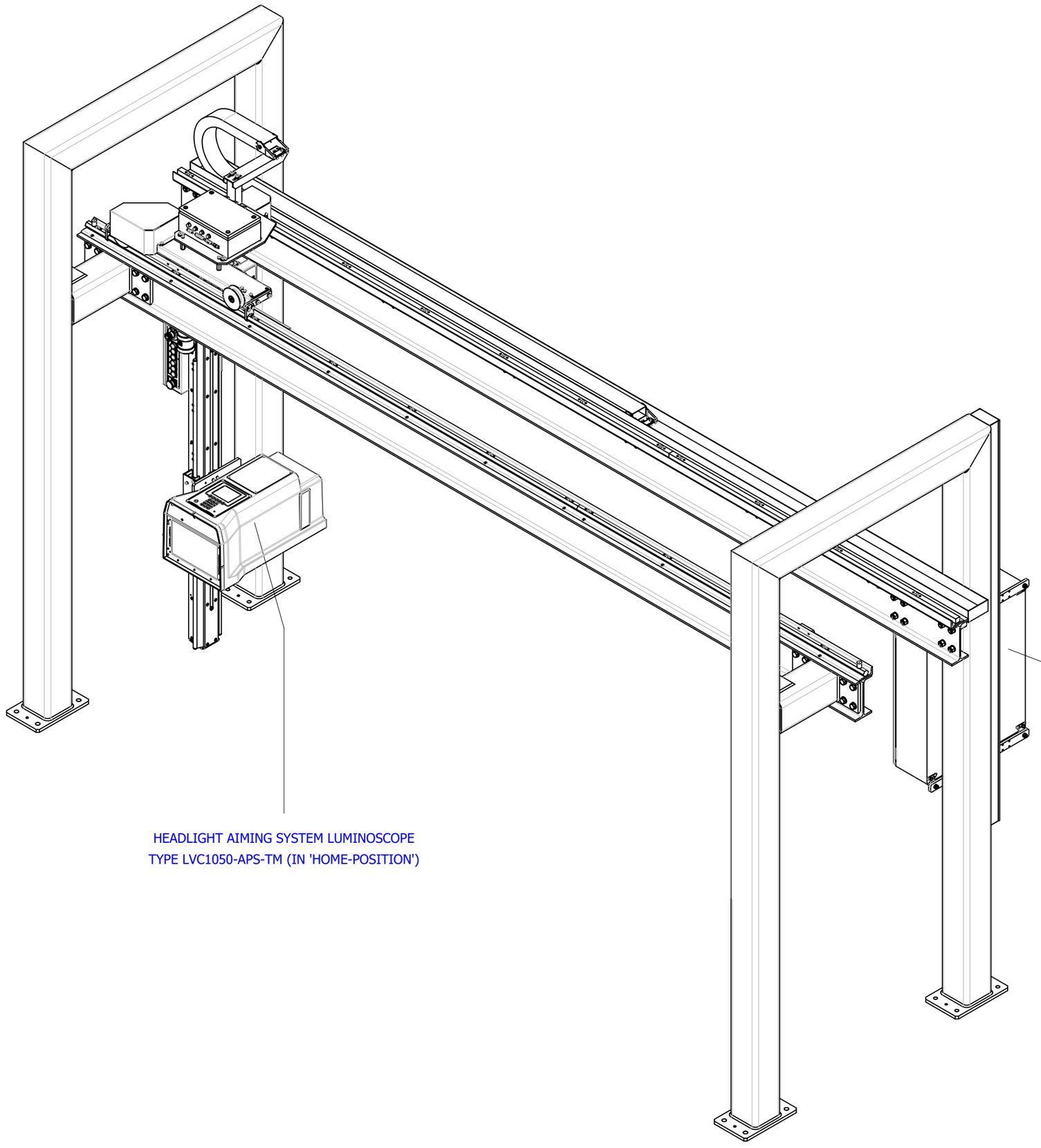
		Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)
		Ed.	LET	
		Appr		
Modification	Date / Name	Original		

L.E.T. AUTOMOTIVE
VAARTLAAN 20
B-9800 DEINZE
TEL:+32 (0)9 381 87 87
FAX:+32 (0)9 386 92 00
EMAIL:INFO@LET.BE

Information INF:
Block schematic overview 2/2

Drawingnumber
IDE190007

+ INF

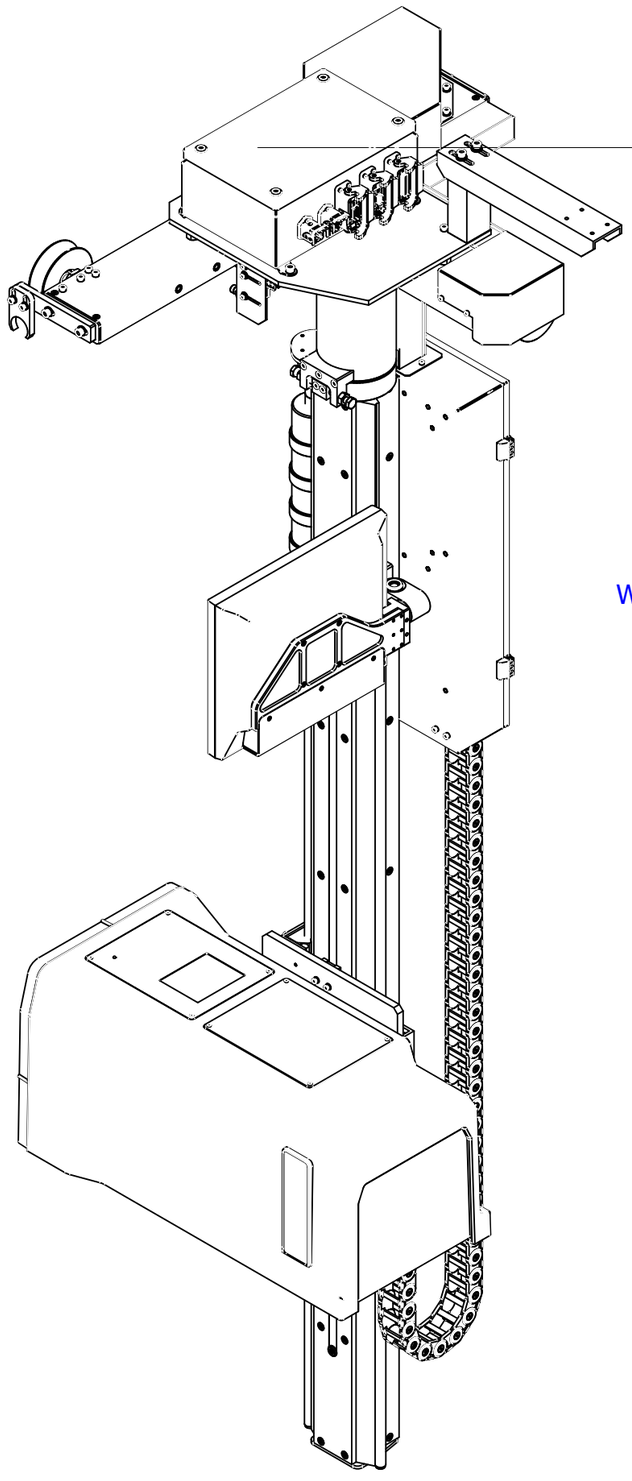


HEADLIGHT AIMING SYSTEM LUMINOSCOPE
TYPE LVC1050-APS-TM (IN 'HOME-POSITION')

POWER SUPPLY & CONTROL PANEL +A1
FOR HEADLIGHT AIMING SYSTEM LUMINOSCOPE
TYPE LVC1050-APS-TM

+INF/12

			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Graphical pages GRAPH: General installation overview	Drawingnumber IDE190007	+ GRAPH	
			Ed.	LET							
			Appr								Page 1
Modification	Date	Name	Original								Total 145

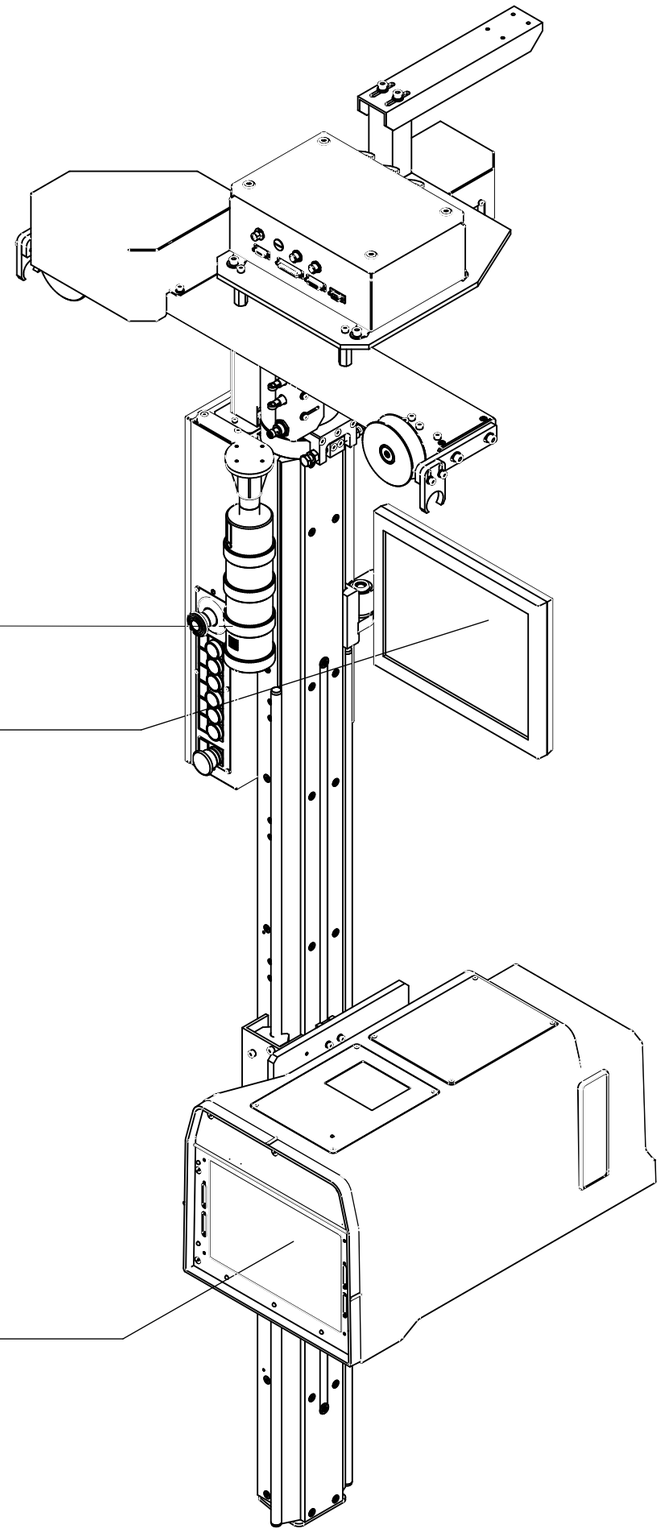


CONNECTORBOX TROLLEY
+A10

APS CONTROLLER ENCLOSURE +A14
WITH APS CONTROLLER BOARD +A14-1A2
CONTROLBOX & SIGNALTOWER

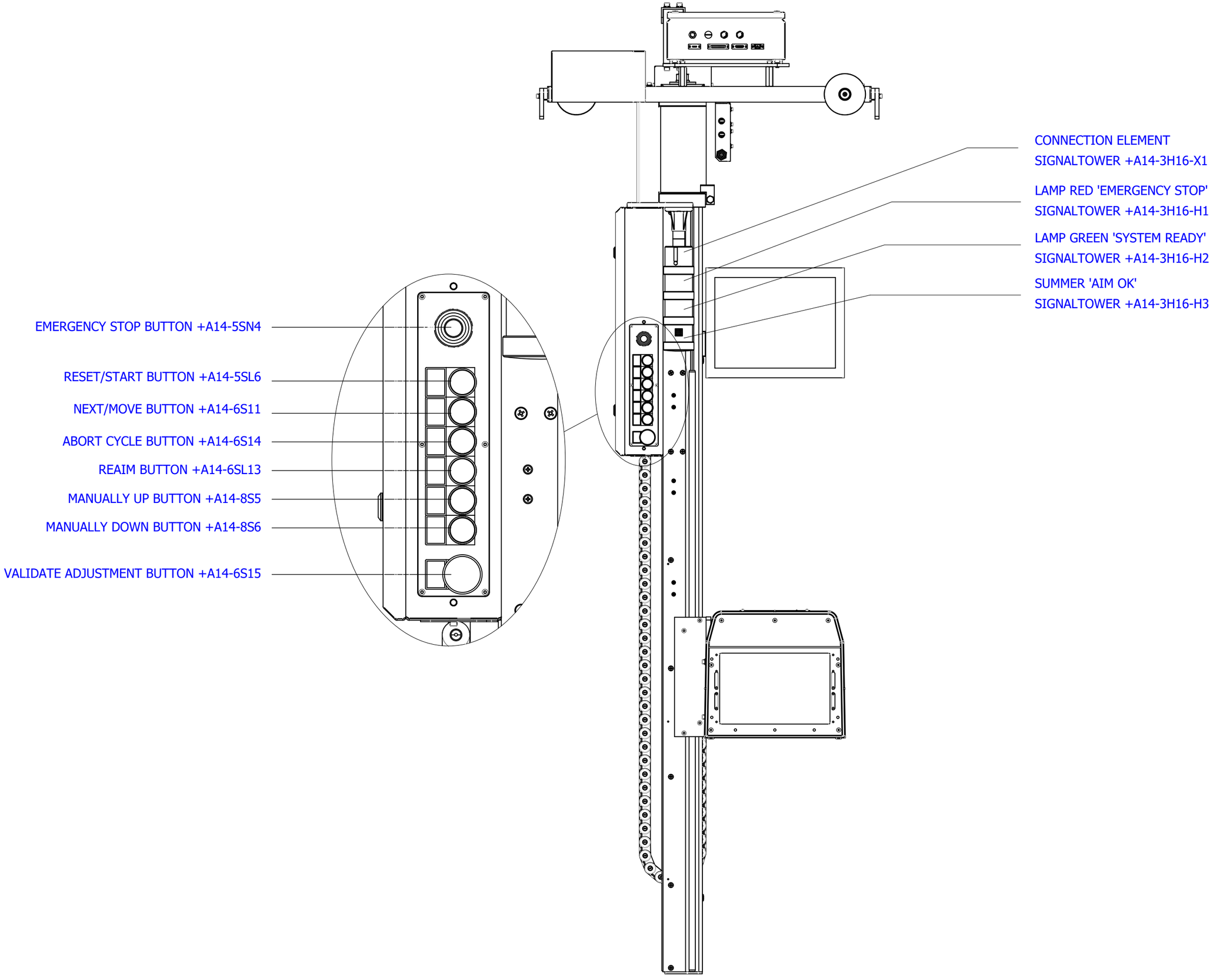
VGA-LCD SCREEN +A11

OPTICAL BLOCK TYPE LVC1060
+A12



1 3

			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Graphical pages GRAPH: Overview Luminoscope system (1/4): General overview	Drawingnumber IDE190007	+ GRAPH
			Ed.	LET						
			Appr							Page 2
Modification	Date	Name	Original							Total 145



			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Graphical pages GRAPH: Overview Luminoscope system (2/4): Details controlbox & signaltower	Drawingnumber IDE190007	+ GRAPH
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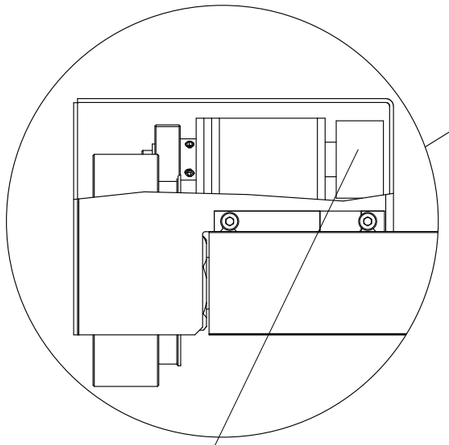
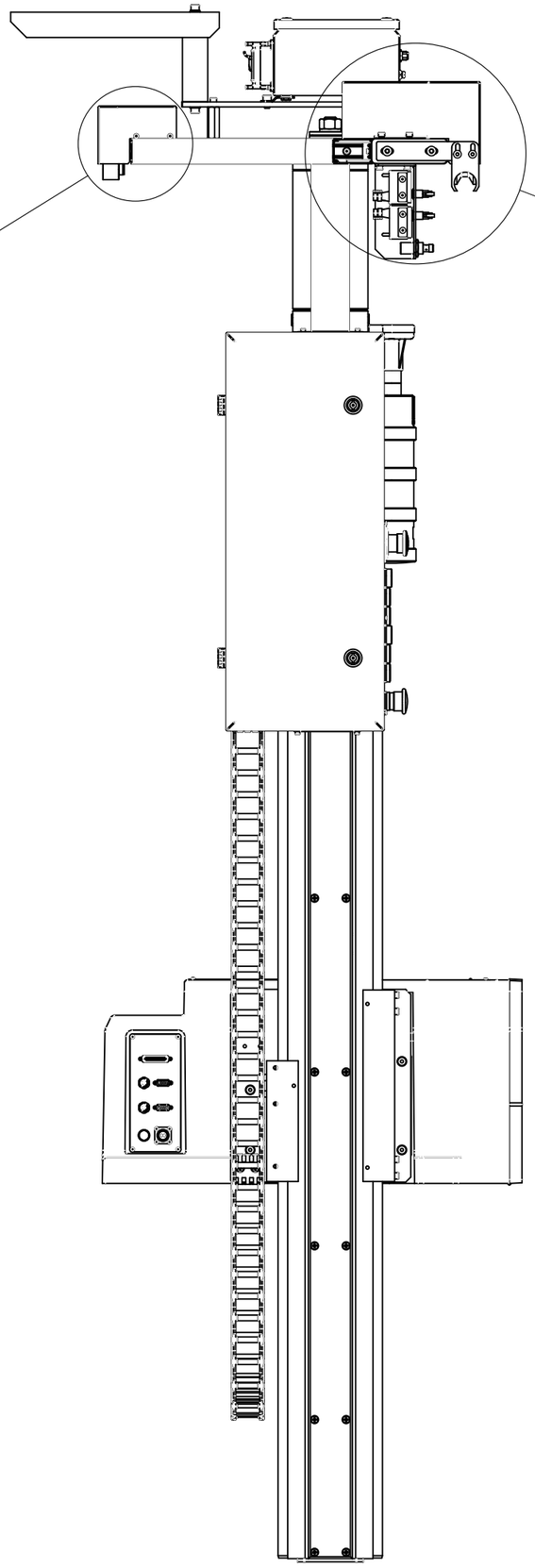
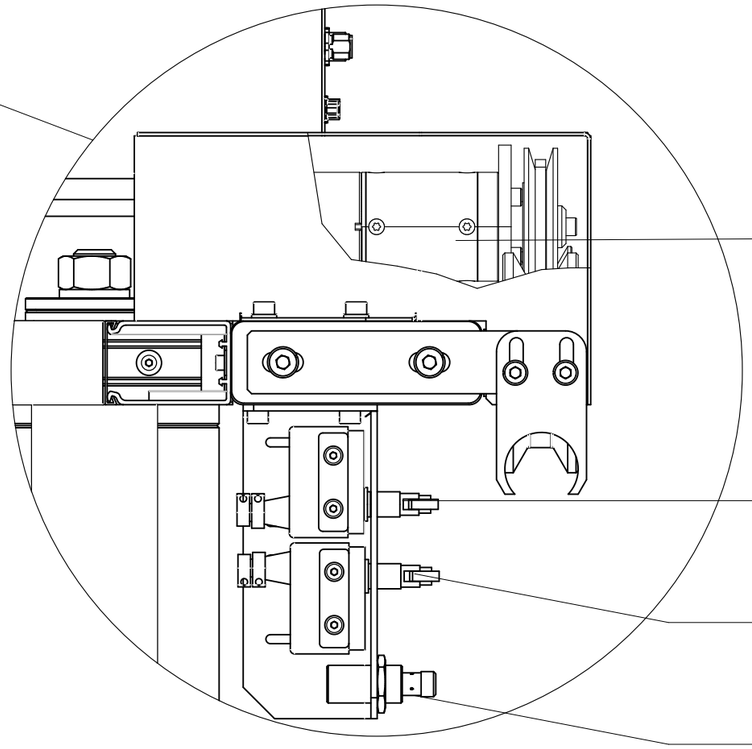
			Appr							Page 3
Modification	Date	Name	Original							Total 145



ENCODER
LEFT/RIGHT MOVEMENT
+A14-2B1





MOTOR LEFT/RIGHT MOVEMENT
+A14-2M14

LIMIT SWITCH LEFT/RIGHT MOVEMENT
+A14-2SD10

PARK SWITCH TROLLEY LUMINOSCOPE
+A14-2SD17

ZERO SWITCH LEFT/RIGHT MOVEMENT
+A14-2SE6

3 5

			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Graphical pages GRAPH: Overview Luminoscope system (3/4): Details left/right movement	Drawingnumber IDE190007	+ GRAPH
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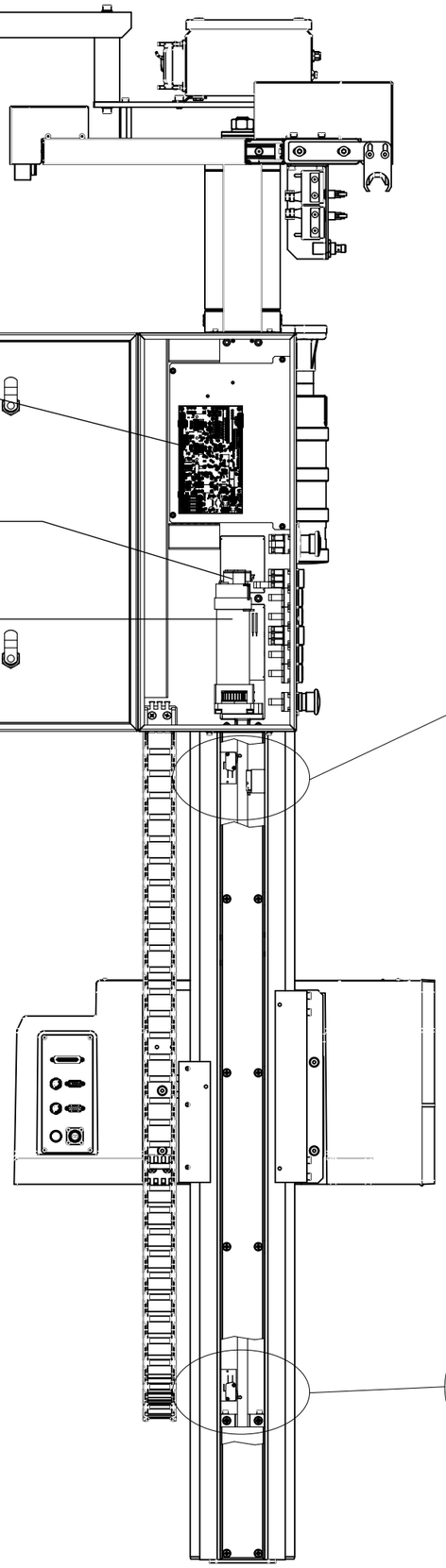
			Appr							Page 4
Modification	Date	Name	Original							Total 145



4 6

			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Graphical pages GRAPH: Overview Luminoscope system (4/4): Details up/down movement	Drawingnumber IDE190007	+ GRAPH
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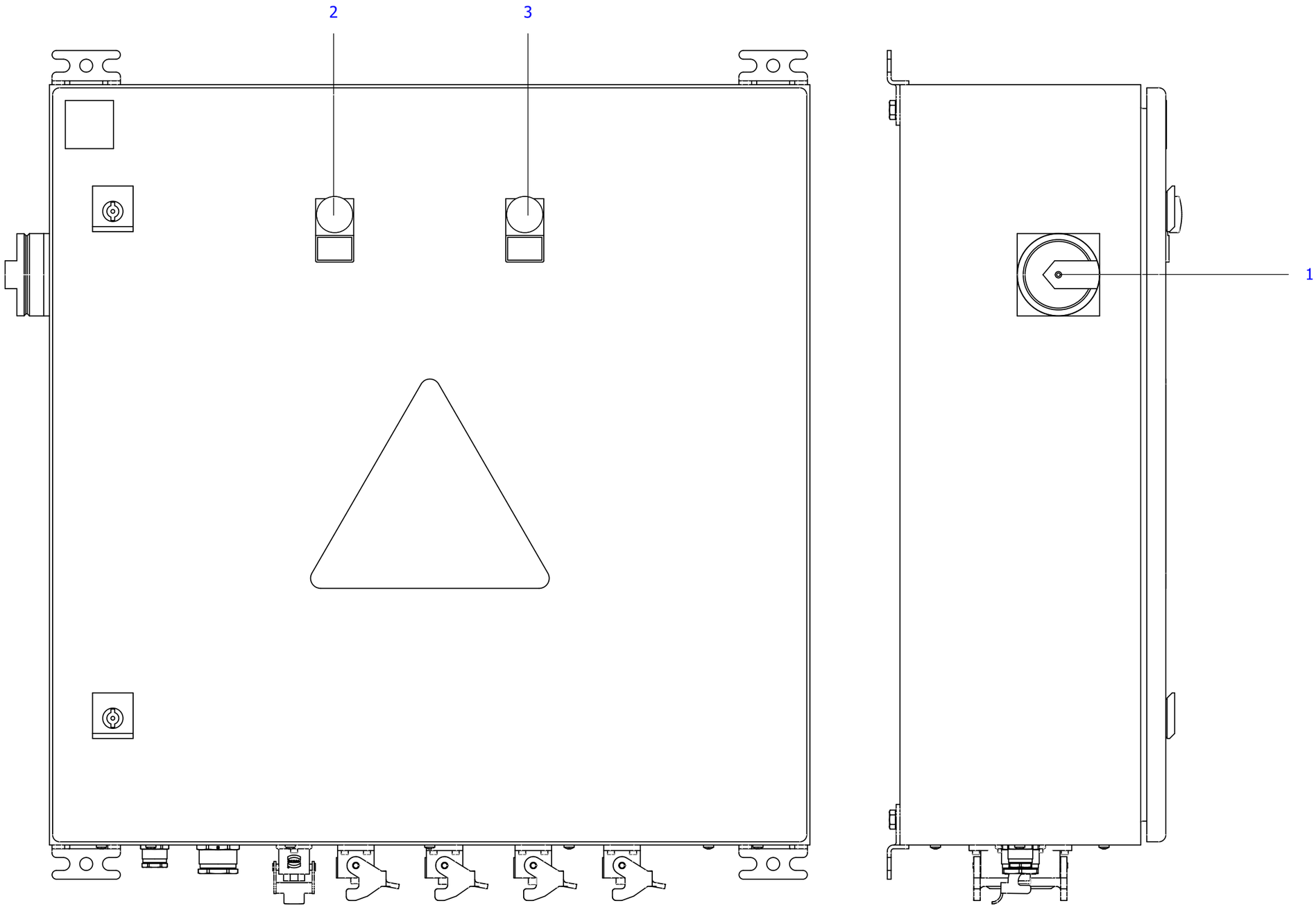
			Appr							Page 5
Modification	Date	Name	Original							Total 145

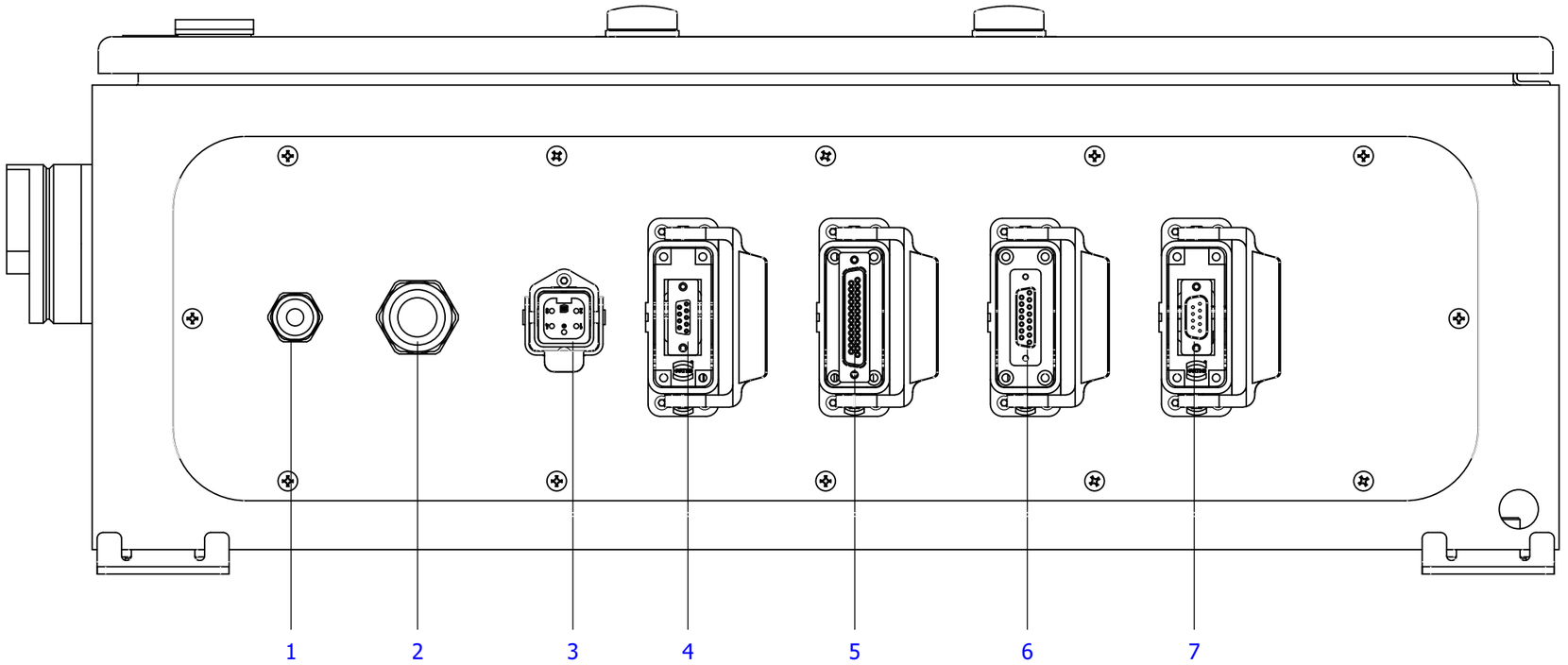


LEGEND

1 : +A1-1S10 = MAIN POWER CUTOUT SWITCH
2 : +A1-1H7 = INDICATOR LIGHT 230VAC POWER OK
3 : +A1-4H2 = INDICATOR LIGHT 24VDC POWER SUPPLY OK

5 7

			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Graphical pages GRAPH: Compact power supply panel +A1: Exterior layout & component description (1/2)	Drawingnumber IDE190007	+ GRAPH
			Ed.	LET						
			Appr							Page 6
Modification	Date	Name	Original							Total 145

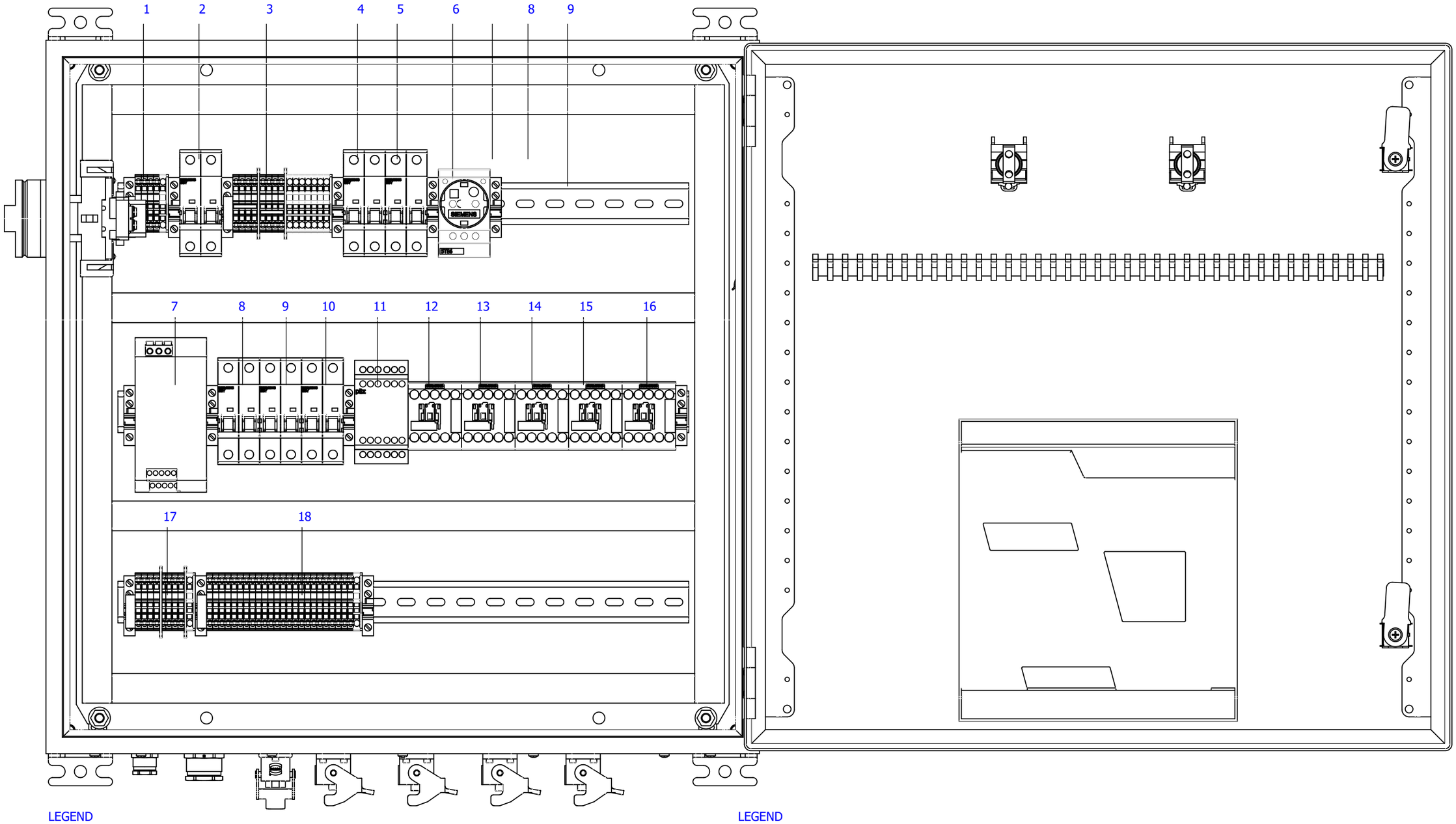


LEGEND

1 : CABLE GLAND FOR CABLE WITH THE 1~230VAC+PE POWER INPUT FROM POWER NET NISSAN SOUTH-AFRICA OR ELECTRICAL PANEL DNH MANUFACTURING
2 : CABLE GLAND FOR CABLE PARALLEL I/O INTERFACE LET WITH DNH MANUFACTURING
3 : +A1-XS100 = PLUG 24VDC POWER SUPPLY -> LUMINOSCOPE SYSTEM
4 : +A1-XS101.3 = PLUG RS232 INTERFACE WITH OPTICAL UNIT FROM LUMINOSCOPE SYSTEM
5 : +A1-XS103.3 = PLUG PARALLEL I/O INTERFACE WITH OPTICAL UNIT FROM LUMINOSCOPE SYSTEM
6 : +A1-XS104.3 = PLUG E-STOP & START INTERFACE WITH LUMINOSCOPE SYSTEM
7 : +A1-XS101.4 = PLUG RS232 INTERFACE WITH PC-CONFIGURATION DNH MANUFACTURING

6 8

			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Graphical pages GRAPH: Compact power supply panel +A1: Exterior layout & component description (2/2)	Drawingnumber IDE190007	+ GRAPH
			Ed.	LET						
			Appr							Page 7
Modification	Date	Name	Original							Total 145



LEGEND

1 : +A1-XL0 = TERMINALSTRIP 230VAC INPUT FROM POWER NET NISSAN SOUTH-AFRICA OR ELECTRICAL PANELS DNH MANUFACTURING
2 : +A1-1F10 = MAIN CIRCUIT BREAKER 230VAC POWER SUPPLY
2 : +A1-XL1 = TERMINALSTRIP 230VAC POWER DISTRIBUTION
4 : +A1-2F2 = CIRCUIT BREAKER 230VAC INPUT FOR 24VDC POWER UNIT
5 : +A1-2F5 = CIRCUIT BREAKER 230VAC SERVICE POWER SOCKET
6 : +A1-3X4 = 230VAC SERVICE POWER SOCKET
7 : +A1-4G3 = POWER SUPPLY UNIT 100-240VAC/24VDC/10A
8 : +A1-4F3 = CIRCUIT BREAKER 24VDC APS-UNIT & OPTICAL UNIT LUMINOSCOPE
9 : +A1-4F7 = CIRCUIT BREAKER 24VDC E-STOP RELAYS
10 : +A1-4F10 = CIRCUIT BREAKER 24VDC FOR POSSIBLE FUTURE SCREWDRIVERS LUMINOSCOPE

LEGEND

11 : +A1-5K2 = MAIN EMERGENCY STOP RELAY
12 : +A1-5K11 = AUXILIARY RELAY EMERGENCY STOP CIRCUIT
13 : +A1-5K14 = RELAY E-STOP CHANNEL 1 FROM WHEEL ALIGNMENT SYSTEM DNH MANUFACTURING
14 : +A1-5K15 = RELAY E-STOP CHANNEL 2 FROM WHEEL ALIGNMENT SYSTEM DNH MANUFACTURING
15 : +A1-5K18 = RELAY E-STOP CHANNEL 1 LET TO WHEEL ALIGNMENT SYSTEM DNH MANUFACTURING
16 : +A1-5K19 = RELAY E-STOP CHANNEL 2 LET TO WHEEL ALIGNMENT SYSTEM DNH MANUFACTURING
17 : +A1-XL2 = TERMINALSTRIP DISTRIBUTION 24VDC POWER SUPPLY
18 : +A1-XL3 = TERMINALSTRIP PARALLEL I/O INTERFACE WITH WHEEL ALIGNMENT SYSTEM DNH MANUFACTURING

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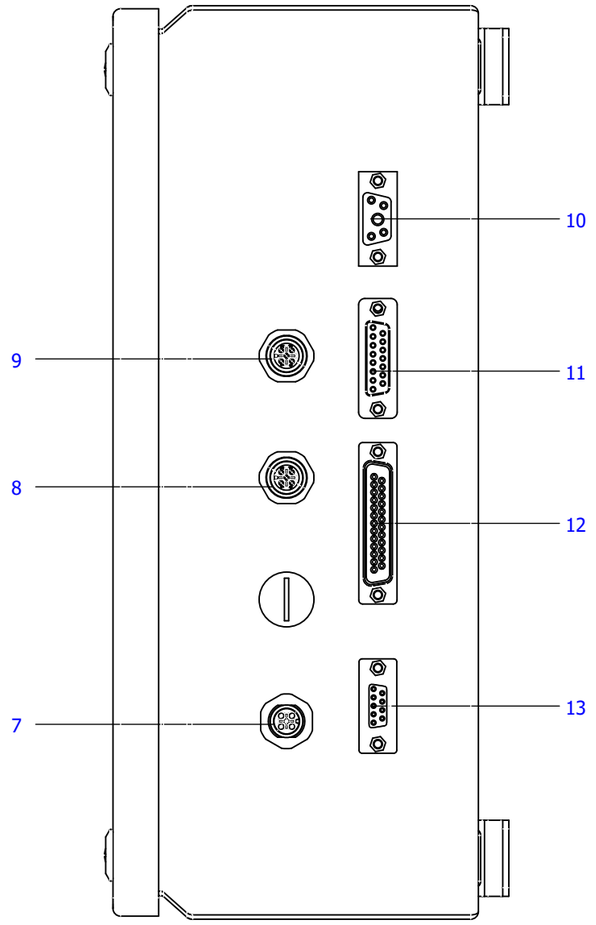
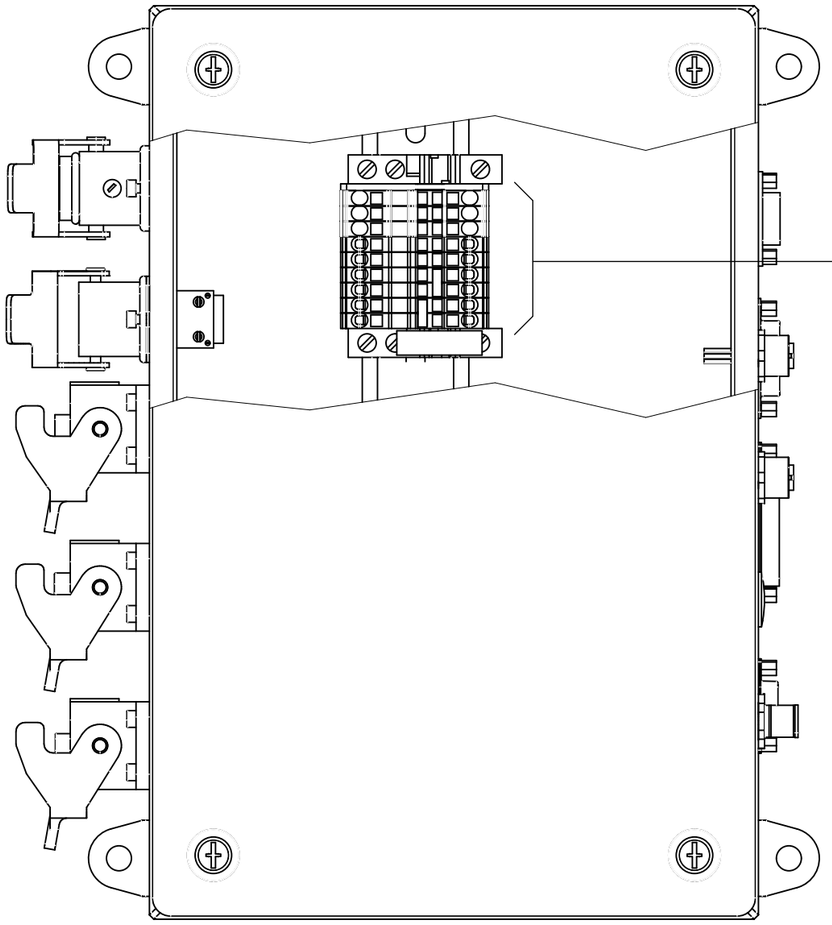
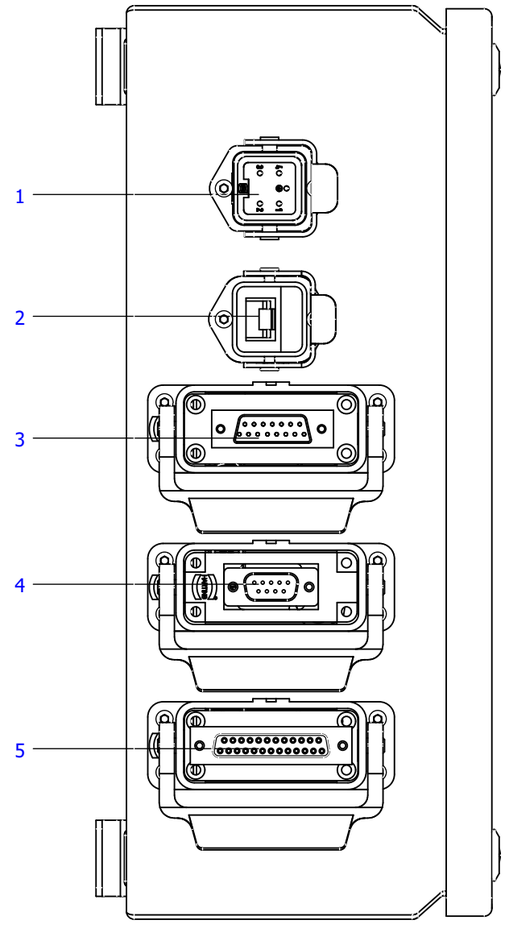
Modification	Date	Name	Original							Total 145







LEGEND

1 : +A10-XS100.2 = PLUG 24VDC POWER INPUT FROM POWER SUPPLY PANEL
2 : +A10-XS102.2 = PLUG OUTPUT CANBUS INTERFACE LUMINOSCOPE SYSTEM (CAN-RESISTOR)
3 : +A10-XS104.2 : PLUG E-STOP/START INTERFACE LUMINOSCOPE SYSTEM <-> POWER SUPPLY PANEL
4 : +A10-XS101.2 = PLUG OUTPUT RS232-INTERFACE LUMINOSCOPE SYSTEM <-> POWER SUPPLY PANEL
5 : +A10-XS103.2 = PLUG PARALLEL I/O INTERFACE LUMINOSCOPE SYSTEM <-> POWER SUPPLY PANEL
6 : +A10-XL1 = TERMINALS 24VDC DISTRIBUTION FOR APS UNIT & SCREWDRIVERS LUMINOSCOPE SYSTEM

LEGEND

7 : +A10-XS117.1 = PLUG FOR CONNECTION SWITCH 'HOME-POSITION' LUMINOSCOPE
8 : +A10-XS102.1 = PLUG INPUT CANBUS INTERFACE FROM OPTICAL UNIT LUMINOSCOPE SYSTEM
9 : +A10-XS110 = SPARE PLUG 24VDC POWER SUPPLY -> SCREWDRIVER CONTROLLER CANDIS LUMINOSCOPE SYSTEM
10 : +A10-XS100.3 = PLUG 24VDC OUTPUT -> APS CONTROLLER BOARD LUMINOSCOPE SYSTEM
11 : +A10-XS104.1 : PLUG E-STOP/START CIRCUIT WITH CONTROLBOX APS-ENCLOSURE LUMINOSCOPE SYSTEM
12 : +A10-XS103.1 = PLUG PARALLEL I/O INTERFACE <-> OPTICAL UNIT LUMINOSCOPE SYSTEM
13 : +A10-XS101.1 = PLUG RS232-INTERFACE <-> OPTICAL UNIT LUMINOSCOPE SYSTEM

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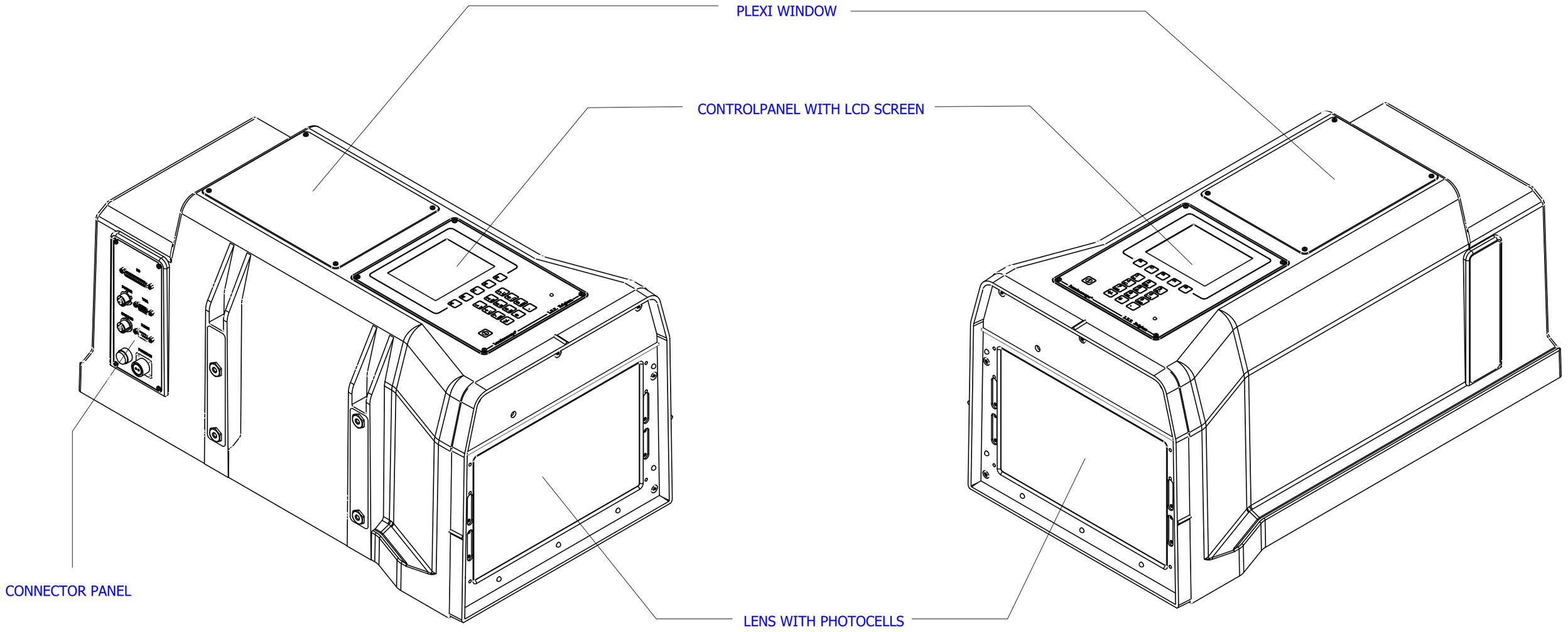
			Ed.	LET						
			Appr							Page 9
Modification	Date	Name	Original							Total 145



			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Graphical pages GRAPH: Layout optical block Luminoscope system +A12 (1/2)	Drawingnumber IDE190007	+ GRAPH
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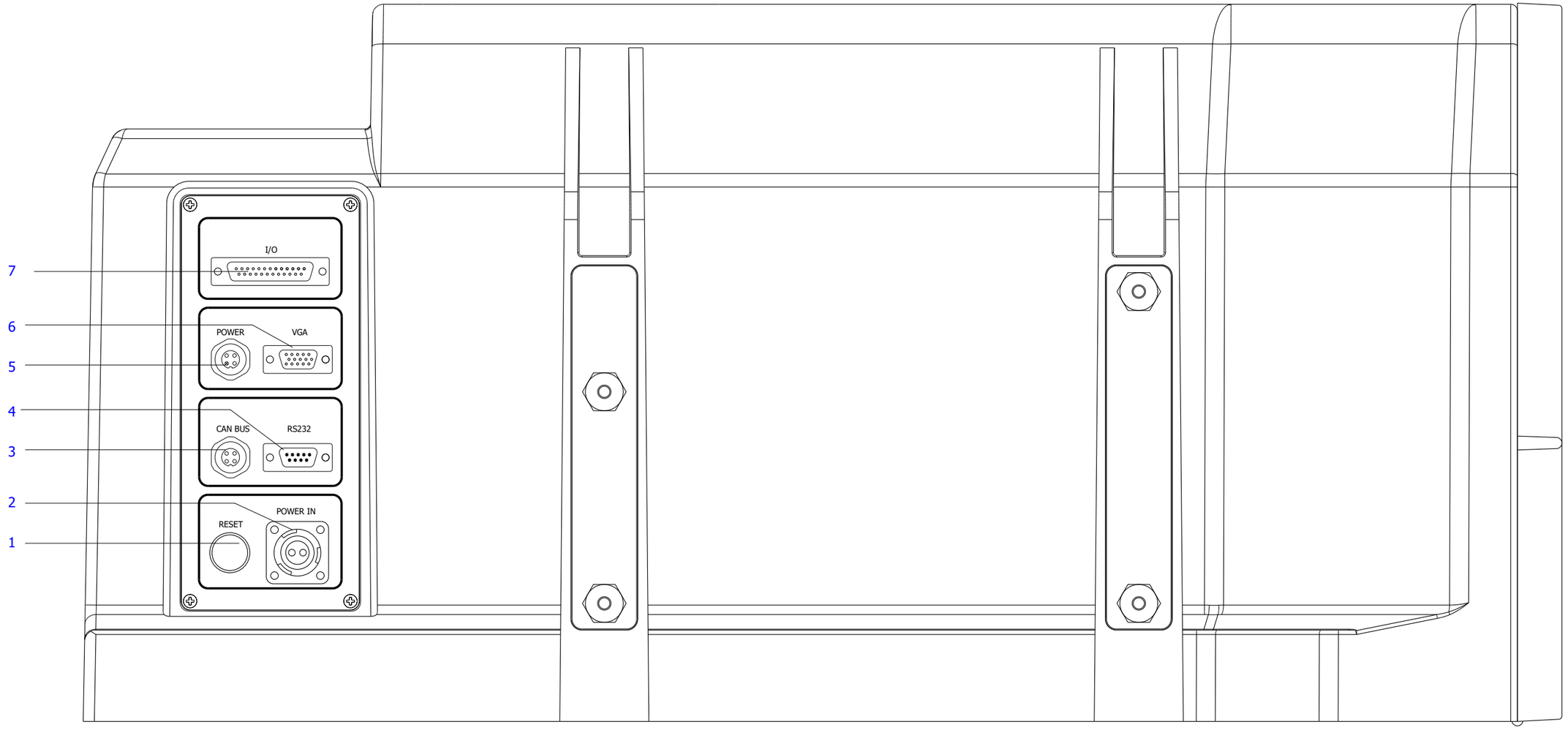
			Appr							Page 10
Modification	Date	Name	Original							Total 145



LEGEND

1 : ON-OFF BUTTON.

2 : +A12-XS100.3 = PLUG 24VDC POWER INPUT FROM APS CONTROLLER BOARD

3 : +A12-XS102 = PLUG CANBUS OUTPUT -> APS CONTROLLER BOARD

4 : +A12-XS101 = PLUG RS232 INTERFACE -> CONNECTORBOX TROLLEY

5 : +A12-XS104 = PLUG 12VDC POWER OUTPUT -> LCD SCREEN POSITIONING MAST

6 : +A12-XS105 = PLUG VGA OUTPUT -> LCD SCREEN POSITIONING MAST

7 : +A12-XS103 = PLUG PARALLEL I/O INTERFACE <-> CONNECTORBOX TROLLEY

			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Graphical pages GRAPH: Layout optical block Luminoscope system +A12 (2/2)	Drawingnumber IDE190007	+ GRAPH
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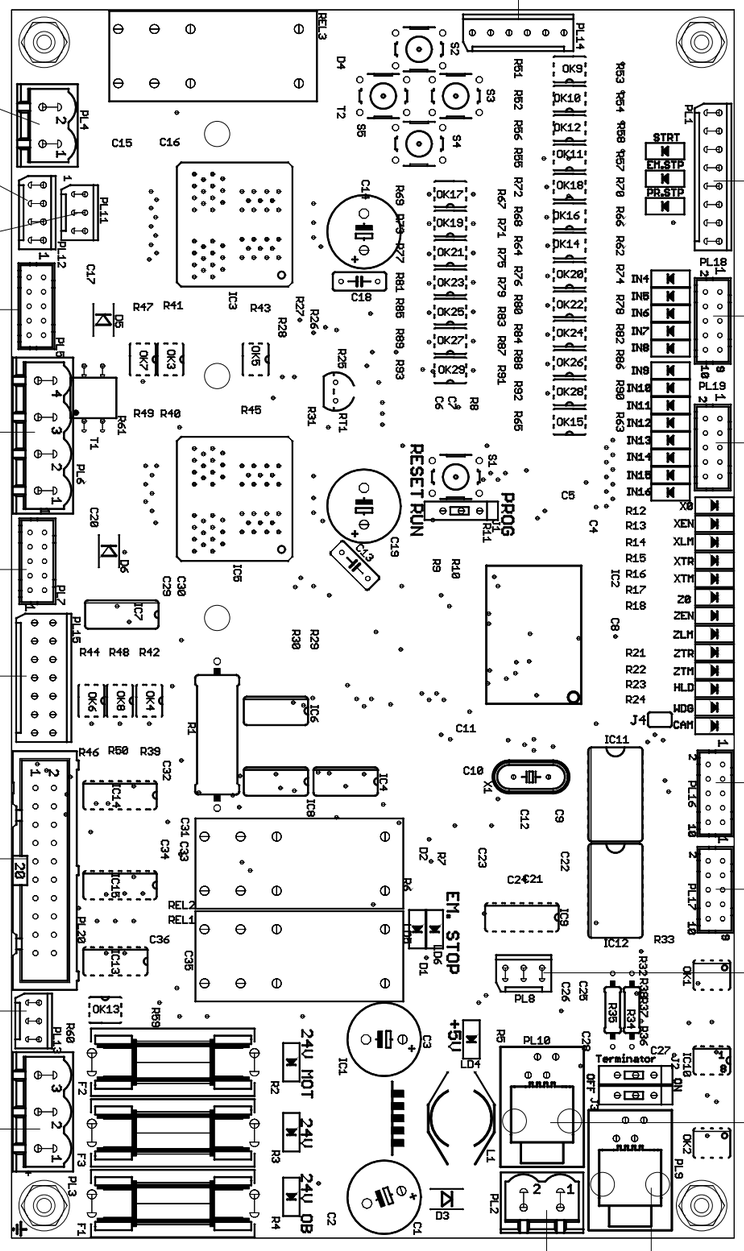
Modification	Date	Name	Original							Total 145



+A14-1A2-PL12 :
PLUG CONNECTION MOTOR L/R MOVEMENT

+A14-1A2-PL11 :
PLUG CONNECTION LIMIT SWITCH L/R MOVEMENT

+A14-1A2-PL10 :
PLUG CONNECTION ZERO SWITCH L/R MOVEMENT

+A14-1A2-PL9 :
PLUG CONNECTION ENCODER L/R MOVEMENT

+A14-1A2-PL15 :
PLUG CONNECTION MOTOR U/D MOVEMENT

+A14-1A2-PL13 :
PLUG CONNECTION ENCODER U/D MOVEMENT

+A14-1A2-PL14 :
PLUG CONNECTION ZERO SWITCH & LIMIT SWITCHES U/D MOVEMENT
+ CONNECTION SIGNALTOWER

+A14-1A2-PL22 :
SPARE PLUG FOR CONNECTION OF A HEIGHT DETECTION BAR

+A14-1A2-PL23 :
PLUG 'HOLD' SIGNAL FOR THE INTERRUPTION OF MOVEMENTS

+A14-1A2-PL5 :
PLUG 24VDC POWER INPUT FROM CONNECTORBOX TROLLEY

+A14-1A2-PL30 : PLUG EXTERNAL PUSHBUTTONS
MANUAL UP-DOWN-LEFT-RIGHT MOVEMENT

+A14-1A2-PL1 : PLUG INTERNAL EMERGENCY STOP
& START CIRCUIT

+A14-1A2-PL16 : PLUG DIGITAL INPUTS I1.01-I1.08

+A14-1A2-PL17 : PLUG DIGITAL INPUTS I1.09-I1.016

+A14-1A2-PL18 : PLUG DIGITAL OUTPUTS O1.01-O1.08

+A14-1A2-PL19 : PLUG DIGITAL OUTPUTS O1.09-O1.16

+A14-1A2-PL6 : RS232 PROGRAMMATION PLUG APS BOARD

+A14-1A2-PL7 : PLUG CANBUS INPUT FROM OPTICAL UNIT

+A14-1A2-PL8 : PLUG CANBUS OUTPUT -> CONNECTORBOX TROLLEY

+A14-1A2-PL4 : PLUG 24VDC POWER OUTPUT -> OPTICAL UNIT

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			Ed.	LET			
			Appr				
Modification	Date	Name	Original				

Graphical pages GRAPH:
Layout APS controller board Luminoscope system +A14-1A2

Drawingnumber
IDE190007

+ GRAPH

1 2 3 4 5 6 7 8 9 10 12 13 14 15 16 17 18 19 20

+A1
/2.1 /4.1 /6.1 /8.1
/3.1 /5.1 /7.1 /9.1
ELECTRICAL PANEL LET

-XL0 1 2 3 4 5PE

2.5 mm²
BK

2.5 mm²
LIGHT BU

2.5 mm²
GNYE

230L1 / 2.2
230N1 / 2.3
PE / 2.3

-1S10
MAIN
SWITCH
3P-32A
1 3 5
2 4 6

2.5 mm²
BK

2.5 mm²
LIGHT BU

-1F10
10A-D
1 3
2 4

2.5 mm²
BK

-1H7
White
230VAC OK
X1
X2

2.5 mm²
LIGHT BU

2.5 mm²
BK

2.5 mm²
LIGHT BU

W=CLIENT/A1-XL0
ÖLFLEX® CLASSIC 100
3x2,5 mm²
Cable 230Vac power input power supply box
Luminoscope system
from power net Nissan Saouth Africa

BN BU GNYE

-X1 L N PE
L N PE

230VAC POWER SUPPLY FROM POWER NET
NISSAN SOUTH AFRICA
OR
230VAC POWER SUPPLY FROM ELECTRICAL PANEL
DNH MANUFACTURING
1~230VAC+PE/16A 50Hz

+CLIENT
PROVISIONS BY THE CUTOMER

+GRAPH/12

2

			Date	1/07/2019
			Ed.	LET
			Appr	
Modification	Date	Name	Original	

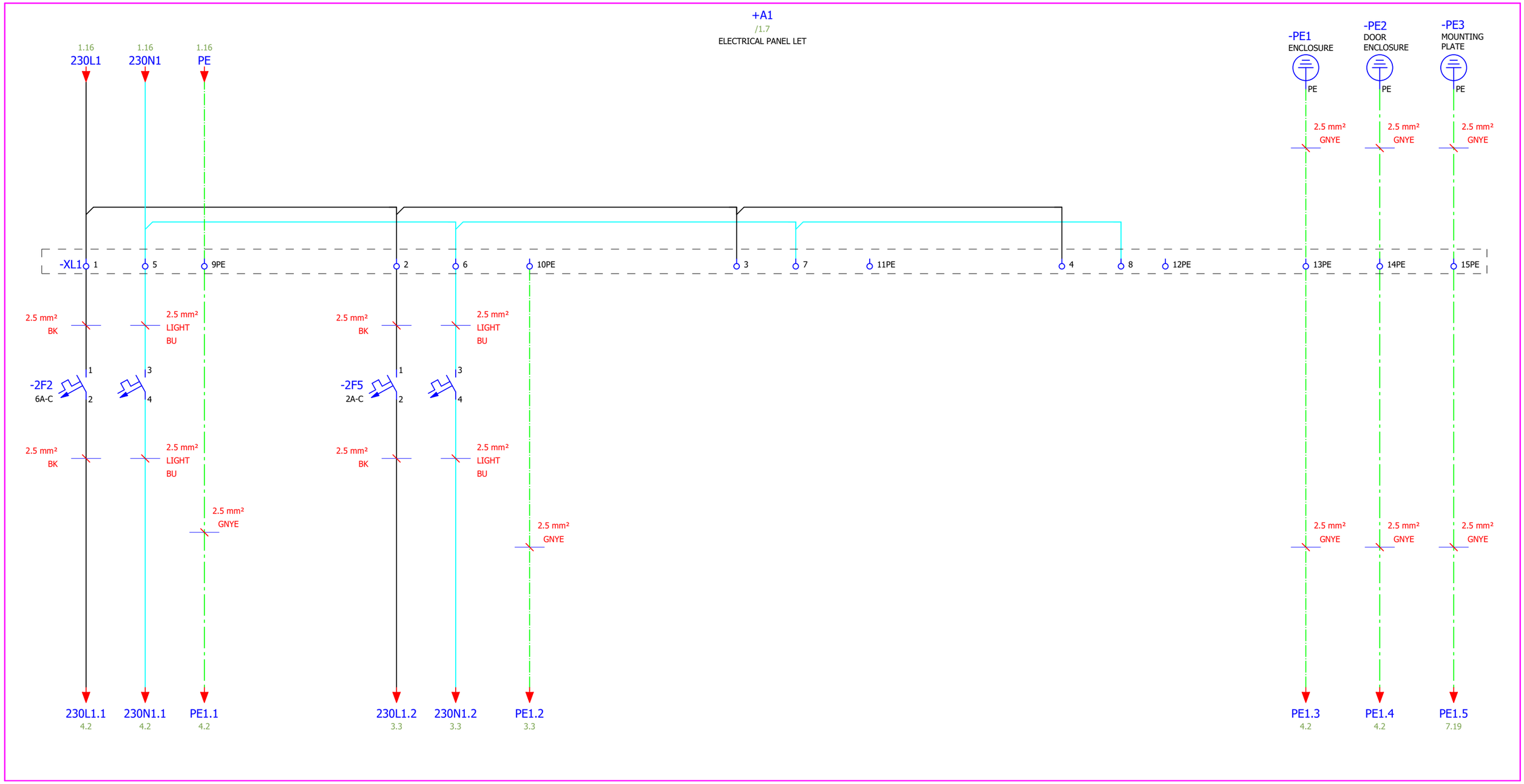
IDE190007
Luminoscope headlamp aiming system
LVC1050-APS-TM (PLM-TM)

L.E.T. AUTOMOTIVE
VAARTLAAN 20
B-9800 DEINZE
TEL:+32 (0)9 381 87 87
FAX:+32 (0)9 386 92 00
EMAIL:INFO@LET.BE

Electrical panel LET +A1:
arrival 230Vac power supply from Nissan South Africa,
main switch & main circuit breaker

Drawingnumber
IDE190007

+ A1



230VAC POWER SUPPLY
LUMINOSCOPE SYSTEM

230VAC POWER SUPPLY
SERVICE POWER SOCKET

SPARE TERMINALS
230VAC POWER SUPPLY

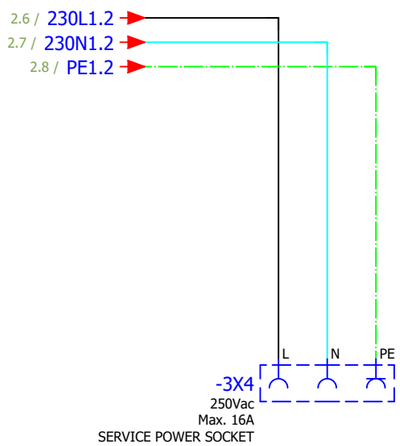
SPARE TERMINALS
230VAC POWER SUPPLY

PE-WIRING

1 3

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Electrical panel LET +A1: distribution 230Vac power supply	Drawingnumber IDE190007	+ A1
			Ed.	LET						
			Appr							Page 2
Modification	Date	Name	Original							Total 145

+A1
/1.7
ELECTRICAL PANEL LET



SERVICE POWER SOCKET
POWER PANEL

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Electrical panel LET +A1: service power socket	Drawingnumber IDE190007	+ A1
			Ed.	LET						
			Appr							Page 3
Modification	Date	Name	Original							Total 145

+A1
/1.7
ELECTRICAL PANEL LET

2.2 / 230L1.1
2.3 / 230N1.1
2.3 / PE1.1
2.18 / PE1.3
2.19 / PE1.4

-4G3
10 A
INPUT:100-240VAC
OUTPUT:24VDC

L N PE

PHOENIX CONTACT
QUINT-PS/ 1AC/24DC/10A

DCOK
I<IN

+ +' +" - -' -" 13 14

1.5 mm² BU
X1
-4H2
White
24VDC OK
X2
1.5 mm² BU

-4F3
6A-C
-4F7
2A-C
-4F10
2A-C

-5K11
/5.10
AUXILIARY RELAY
E-STOP

-XL2 1 5 2 6 3 7 4 8 9PE

1 mm² BU
1 mm² GNYE

24L1 8.3
24N1 8.4
24L2 5.2
24N2 5.2
24L3 8.3
24N3 8.4
PE1 8.5

24Vdc POWER SUPPLY
LUMINOSCOPE

24Vdc POWER SUPPLY
INTENAL POWER PANEL

24Vdc POWER SUPPLY
SCREWDRIVERS LUMINOSCOPE

SPARE TERMINALS
24Vdc POWER SUPPLY

PE

3 5

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Electrical panel LET +A1: 24Vdc power unit & distribution 24Vdc power supply	Drawingnumber IDE190007	+ A1
			Ed.	LET						
			Appr							Page 4
Modification	Date	Name	Original							Total 145

+A1
/1.7
ELECTRICAL PANEL LET

4.7 / 24L2

1 mm² BU

-5K14
/5.14
E-STOP WHEELALIGNER CHANNEL 1

-5K18
/5.18
E-STOP LUMINOSCOPE CHANNEL 1

-5K15
/5.15
E-STOP WHEELALIGNER CHANNEL 2

-5K19
/5.20
E-STOP LUMINOSCOPE CHANNEL 2

EMST1_WAM_NO
6.3

EMST2_WAM_NO
6.5

EMST1_LET_NC
8.14

EMST2_LET_NC
8.16

-5K2
PNOZ X3 24VAC/DC

A1 B1 S21 S22 S31 S32 S11 S12 13 23 33 41

E-STOP INPUT CHANNEL 1

E-STOP INPUT CHANNEL 2

AC DC

24V A1 A2

pilz

AUTOMATIC RESET

MANUAL RESET

A2 B2 Y31 Y32 S13 S14 S33 S34 14 24 34 42

+WAM

-KA1
E-STOP RELAY WHEEL ALIGNMENT MACHINE CHANNEL 1
NO C

-KA2
E-STOP RELAY WHEEL ALIGNMENT MACHINE CHANNEL 2
NO C

+A14

-5SN4
E-STOP BUTTON LUMINOSCOPE
51 52

-5SN4
E-STOP BUTTON LUMINOSCOPE
21 22

START_NO
8.14
RESET EMERGENCY STOP

8.15
START_C

-5K11
AUXILIARY RELAY E-STOP
A1 A2

6.4
EMST1_WAM_C

6.6
EMST2_WAM_C

8.14
EMST1_LET_C

8.17
EMST2_LET_C

-5K14
E-STOP WHEELALIGNER CHANNEL 1

-5K15
E-STOP WHEELALIGNER CHANNEL 2

-5K18
E-STOP LUMINOSCOPE CHANNEL 1

-5K19
E-STOP LUMINOSCOPE CHANNEL 2

4.8 / 24N2
0Vdc

PILZ.774 310
PNOZ X3 24VAC/DC

SIE.3RT2017-1BB42
SIE.3RT2916-1DG00
1 2 /4.10
3 4 /7.17
5 6 /8.16
21 22

SIE.3RT2017-1BB42
SIE.3RT2916-1DG00
1 2 /5.4
3 4 /6.12
5 6
21 22

SIE.3RT2017-1BB42
SIE.3RT2916-1DG00
1 2 /5.6
3 4 /6.12
5 6
21 22

SIE.3RT2017-1BB42
SIE.3RT2916-1DG00
1 2 /5.4
3 4
5 6
21 22

SIE.3RT2017-1BB42
SIE.3RT2916-1DG00
1 2 /5.6
3 4
5 6
21 22

4 6

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Electrical panel LET +A1: emergency stop relays & circuit
			Ed.	LET			Drawingnumber IDE190007
			Appr				+ A1
Modification	Date	Name	Original				Page 5 Total 145

+A1
/1.7
ELECTRICAL PANEL LET

EMST1_WAM_NO / 5.14
EMST1_WAM_C / 5.14
EMST2_WAM_NO / 5.15
EMST2_WAM_C / 5.15
CAR ALIGNED_NO / 9.7
MOVE INHIBIT_NO / 9.5
EM_STOP_WAM / 9.5
GND / 9.3

1 mm² BU

-XL3 1 2 3 4 5 6 7 8 9 10

-5K14
/5.14
E-STOP
WHEELALIGNER
CHANNEL 1

-5K15
/5.15
E-STOP
WHEELALIGNER
CHANNEL 1

W=A1-XL3/WAM-XL_LET1
/7.4
ÖLFLEX® CLASSIC 110
25x1 mm²
Cable parallel I/O interface
LET <-> wheelaligner DNH

1 2 3 4 5 6 7 8

-XL_LET1 1 2 3 4 5 6 7 8 9 10

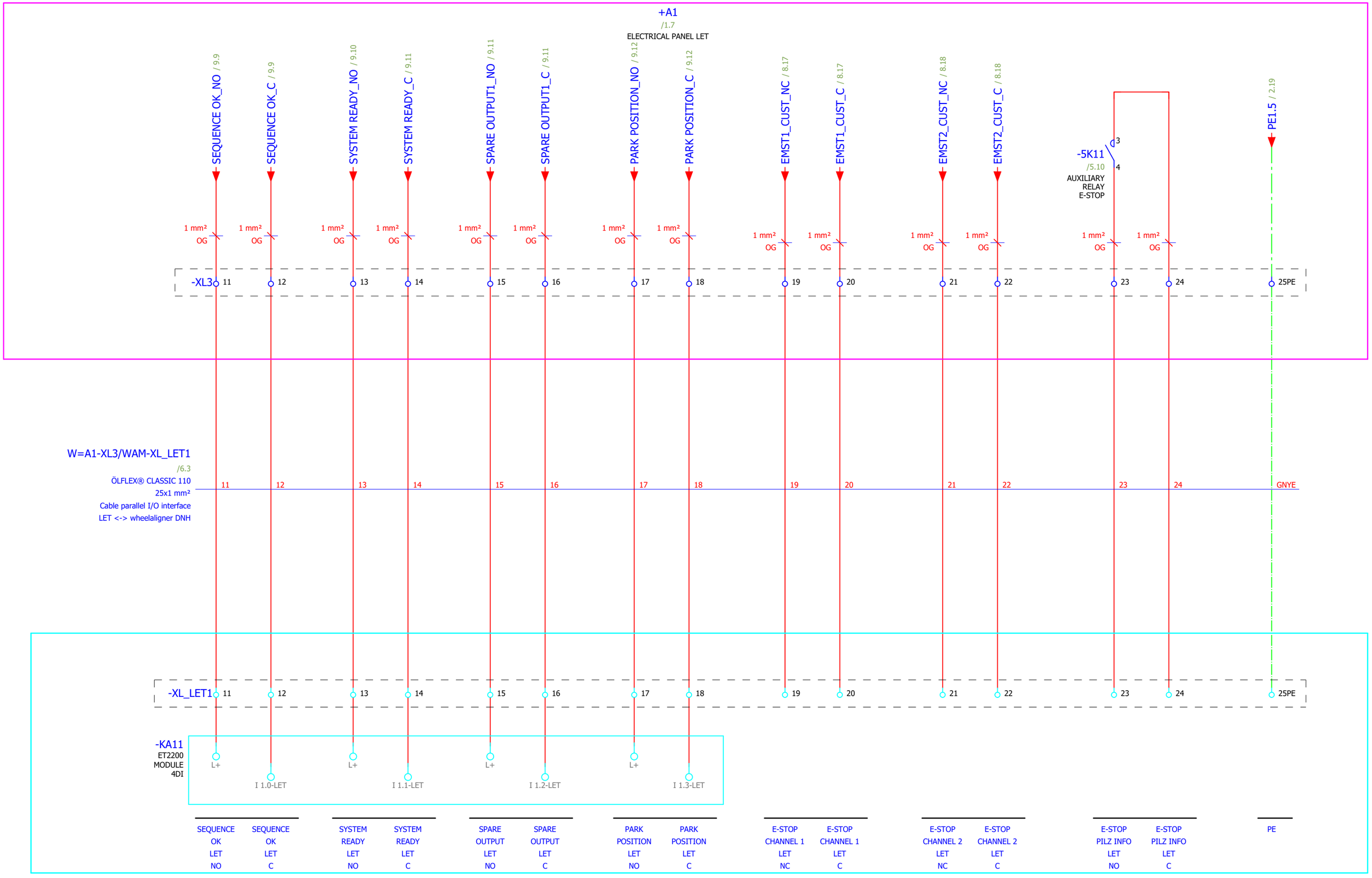
-KA1 E-STOP CHANNEL 1	-KA2 E-STOP CHANNEL 2	-KA3 CAR ALIGNED	-KA4 MOVE INHIBIT				
E-STOP CONTACT CHANNEL 1 WAM NO	E-STOP CONTACT CHANNEL 1 WAM C	E-STOP CONTACT CHANNEL 2 WAM NO	E-STOP CONTACT CHANNEL 2 WAM C	CAR ALIGNED WAM NO	CAR ALIGNED WAM C	MOVE INHIBIT WAM NO	MOVE INHIBIT WAM C
E-STOP INFO WAM NO	E-STOP INFO WAM NO	SPARE	SPARE				

+WAM
ELECTRICAL PANELS WHEELALIGNMENT MACHINE

TERMINALS FOR I/O EXCHANGE WHEELALIGNER <-> LUMINOSCOPE LET :

LET INPUTS

			Date	1/07/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Electrical panel LET +A1: Parallel I/O interface LET <-> wheelaligner DNH: LET inputs	Drawingnumber IDE190007	+ A1	
			Ed.	LET							
			Appr								Page 6
Modification	Date	Name	Original								Total 145



+WAM

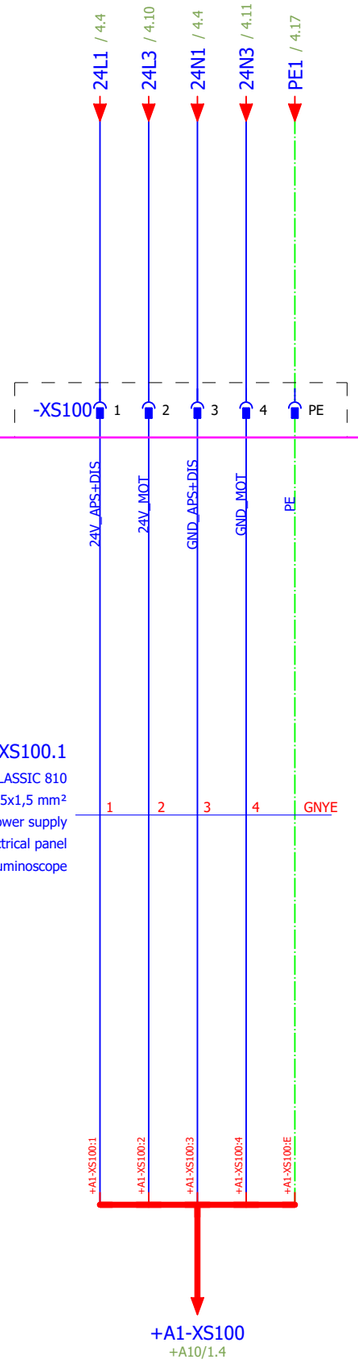
ELECTRICAL PANELS WHEELALIGNMENT MACHINE

TERMINALS FOR I/O EXCHANGE WHEEL ALIGNMENT MACHINE <-> LUMINOSCOPE LET :

LET OUTPUTS

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Electrical panel LET +A1: Parallel I/O interface LET <-> wheelaligner DNH: LET outputs	Drawingnumber IDE190007	+ A1
			Ed.	LET					Page 7
			Appr						Total 145
Modification	Date	Name	Original						

24Vdc POWER SUPPLY -> LUMINOSCOPE

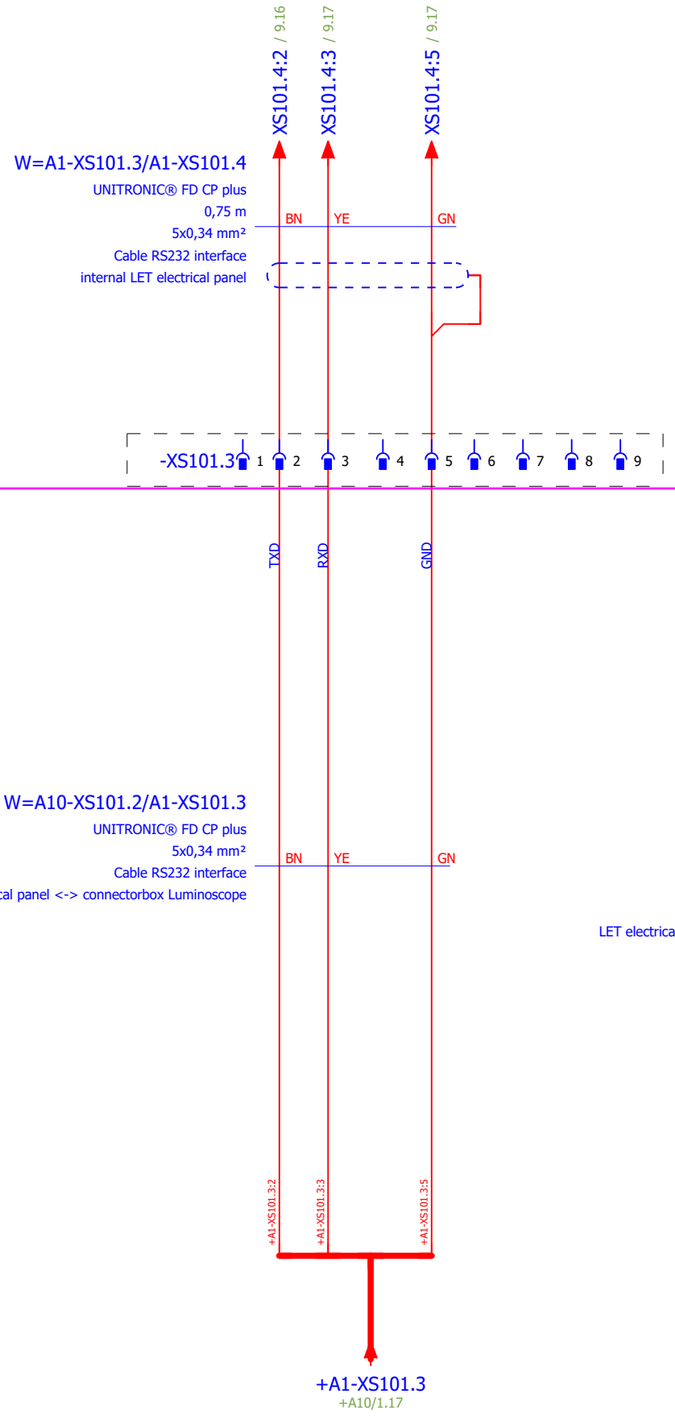


W=A1-XS100/A10-XS100.1
ÖLFLEX® FD CLASSIC 810
5x1,5 mm²
Cable 24Vdc power supply
LET electrical panel
-> connectorbox Luminoscope

+A1-XS100
+A10/1.4

RS232 INTERFACE
LUMINOSCOPE LET <-> DNH

+A1
/1.7
ELECTRICAL PANEL LET

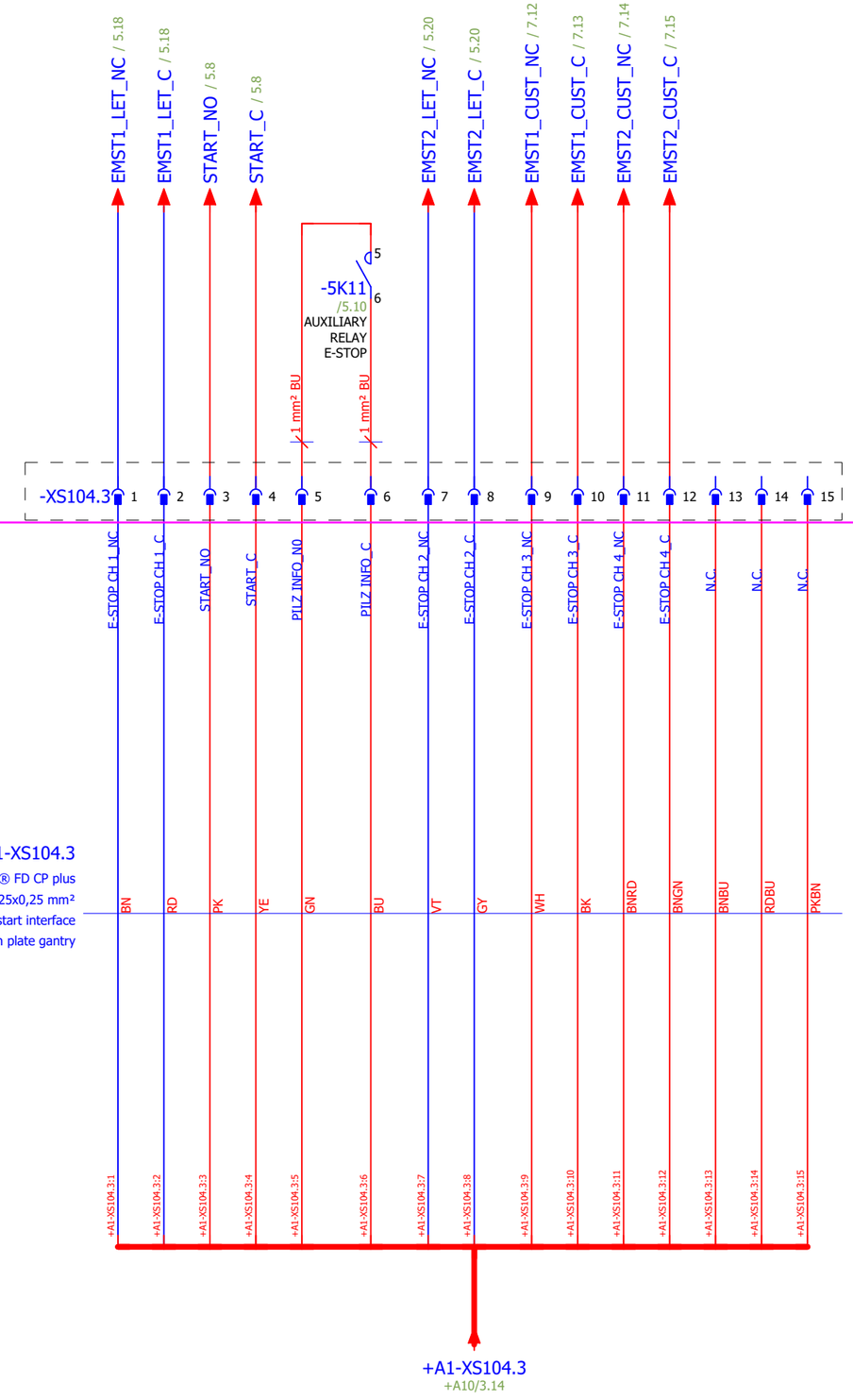


W=A1-XS101.3/A1-XS101.4
UNITRONIC® FD CP plus
0,75 m
5x0,34 mm²
Cable RS232 interface
internal LET electrical panel

W=A10-XS101.2/A1-XS101.3
UNITRONIC® FD CP plus
5x0,34 mm²
Cable RS232 interface
LET electrical panel <-> connectorbox Luminoscope

+A1-XS101.3
+A10/1.17

E-STOP & START INTERFACE <-> LUMINOSCOPE



W=A10-XS104.2/A1-XS104.3
UNITRONIC® FD CP plus
25x0,25 mm²
Cable E-stop & start interface
LET electrical panel <-> cable interconnection plate gantry

+A1-XS104.3
+A10/3.14

[CONNECTION WITH CONNECTORBOX TROLLEY LUMINOSCOPE +A10]

7

[CONNECTION WITH CONNECTORBOX TROLLEY LUMINOSCOPE +A10]

[CONNECTION WITH CONNECTORBOX TROLLEY LUMINOSCOPE +A10]

9

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Electrical panel LET +A1: plugs 24Vdc power supply, RS232-interface & E-stop/start interface	Drawingnumber IDE190007	+ A1
			Ed.	LET						
			Appr							Page 8
Modification	Date	Name	Original							Total 145

+A1
/1.7
ELECTRICAL PANEL LET

PARALLEL I/O INTERFACE <-> LUMINOSCOPE

GND / 6.12
MOVE INHIBIT_NO / 6.9
EM_STOP_WAM / 6.12
CAR ALIGNED_NO / 6.7
SEQUENCE OK_NO / 7.4
SEQUENCE OK_C / 7.5
SYSTEM READY_NO / 7.6
SYSTEM READY_C / 7.7
SPARE OUTPUT1_NO / 7.8
SPARE OUTPUT1_C / 7.9
PARK POSITION_NO / 7.10
PARK POSITION_C / 7.11

1 mm²
BU

-XS103.3 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

+12V GND N.C. N.C. SPARE MOVE INHIBIT START CYCLE INFO E-STOP ABORT CYCLE SPARE INPUT CAR ALIGNED COMMON N.C. N.C. N.C. SEQUENCE OK_NO SEQUENCE OK_C SEQUENCE NOK_NO SEQUENCE NOK_C SYSTEM READY_NO SYSTEM READY_C SPARE OUT_NO SPARE OUT_C PARK_NO PARK_C

W=A10-XS103.2/A1-XS103.3
ÖLFLEX® FD 855 P
25x0,5 mm²
Cable parallel I/O interface
LET electrical panel <->
connectorbox Luminoscope

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

+A1-XS103.3:1 +A1-XS103.3:2 +A1-XS103.3:3 +A1-XS103.3:4 +A1-XS103.3:5 +A1-XS103.3:6 +A1-XS103.3:7 +A1-XS103.3:8 +A1-XS103.3:9 +A1-XS103.3:10 +A1-XS103.3:11 +A1-XS103.3:12 +A1-XS103.3:13 +A1-XS103.3:14 +A1-XS103.3:15 +A1-XS103.3:16 +A1-XS103.3:17 +A1-XS103.3:18 +A1-XS103.3:19 +A1-XS103.3:20 +A1-XS103.3:21 +A1-XS103.3:22 +A1-XS103.3:23 +A1-XS103.3:24 +A1-XS103.3:25

+A1-XS103.3
+A10/2.9

RS232 INTERFACE
LET <-> ELECTRICAL PANEL DNH

XS101.4:2 / 8.8
XS101.4:3 / 8.8
XS101.4:5 / 8.9

W=A1-XS101.3/A1-XS101.4
UNITRONIC® FD CP plus
0,75 m
5x0,34 mm²
Cable RS232 interface
internal LET electrical panel

-XS101.4 1 2 3 4 5 6 7 8 9

TXD RXD GND

W=A1-XS101.4/WAM-XS_LET2
UNITRONIC® FD CP plus
5x0,34 mm²
Cable RS232 interface
Luminoscope LET <->
PC-configuration wheelaligner DNH

BN YE GN

XS_LET2 1 2 3 4 5 6 7 8 9
RXD TXD GND

COM PORT N°.....

-A?
COMPUTER/PC WHEELALIGNMENT MACHINE

RS232 INTERFACE LET <-> WHEELALIGNER
PVS/RSP

+WAM
ELECTRICAL PANELS WHEELALIGNMENT MACHINE

CONNECTION WITH
CONNECTORBOX TROLLEY LUMINOSCOPE +A10

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Electrical panel LET +A1: plugs parallel I/O interface & RS232 interface with wheelaligner DNH	Drawingnumber IDE190007	+ A1
			Ed.	LET						
			Appr							Page 9
Modification	Date	Name	Original							Total 145

CONNECTION WITH POWER SUPPLY PANEL +A1

+A1/8.4
+A1-XS100

+A1-XS100:1 +A1-XS100:2 +A1-XS100:3 +A1-XS100:4 +A1-XS100:E

W=A1-XS100/A10-XS100.1
ÖLFLEX® FD CLASSIC 810
5x1,5 mm²
Cable 24Vdc power supply
LET electrical panel
-> connectorbox Luminoscope

+A10
/2.2
/3.2
CONNECTORBOX TROLLEY
LUMINOSCOPE

-XS100.1 1 2 3 4 E

PE
PE
0.75 mm² GNYE

0.75 mm² BK
0.75 mm² GNYE
0.75 mm² RD
0.75 mm² BK
0.75 mm² RD

-XL1 1 2 3 4 5 6 7PE 8PE 9PE

+A1-XL1:8PE / 2.17

0.75 mm² RD
0.75 mm² BK
0.75 mm² GNYE

-XS100.2 1 3 2 4 E

0.34 mm² BN
0.34 mm² WH
0.34 mm² BU
0.34 mm² BK

-XS110 1 2 3 4 5

W=A10-XS100.2/A14-1A2-PL5
ÖLFLEX® CLASSIC 100
1,39 m
3x0,75 mm²
Cable 24Vdc connectorbox -> APS controller board
Luminoscope unit
HFKAB 191210_01KOL

24V_APS GND_APS PE_APS
BN BU GNYE

+A10-XS100.2:1 +A10-XS100.2:2 +A10-XS100.2:E

+A10-XS100.2
+A14/1.5

24VDC POWER -> APS CONTROLLER BOARD +A14

SPARE 24VDC POWER FOR
FUTURE SCREWDRIVER CONTROLLER

CONNECTION WITH POWER SUPPLY PANEL +A1

+A1/8.9
+A1-XS101.3

+A1-XS101.3:2 +A1-XS101.3:3 +A1-XS101.3:5

W=A10-XS101.2/A1-XS101.3
UNITRONIC® FD CP plus
5x0,34 mm²
Cable RS232 interface
LET electrical panel <-> connectorbox Luminoscope

-XS101.2 1 2 3 4 5 6 7 8 9

W=A10-XS101.1/A10-XS101.2
UNITRONIC® FD CP plus
0,25 m
3x0,25 mm²
Cable RS232 interface
connectorbox Luminoscope unit

BN GN WH

-XS101.1 1 2 3 4 5 6 7 8 9

W=A12-XS101/A10-XS101.1
UNITRONIC® FD CY
3,57 m
4x0,25 mm²
Cable RS232 interface
optical unit LVC1050 -> connectorbox
Luminoscope unit
HFKAB 191213_01KOL

TXD RXD GND

+A12-XS101:2 +A12-XS101:3 +A12-XS101:5

+A12-XS101
+A12/1.9

RS232 INTERFACE <-> OPTICAL UNIT +A12

+A1/9

2

			Date	28/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Connectorbox trolley Luminoscope +A10: 24Vdc power input, distribution & supply to APS-unit + RS232 interface Luminoscope system
			Ed.	LET			
			Appr				
Modification	Date	Name	Original				

Drawingnumber
IDE190007

+ A10

Page 1
Total 145

CONNECTION WITH POWER SUPPLY PANEL +A1

+A1/9.8
+A1-XS103.3

W=A10-XS103.2/A1-XS103.3
ÖLFLEX® FD 855 P
25x0,5 mm²
Cable parallel I/O interface
LET electrical panel <-> connectorbox Luminoscope

+A10
/1.1
CONNECTORBOX TROLLEY
LUMINOSCOPE

-XS103.2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

+12V GND N.C. N.C. SPARE MOVE INHIBIT START CYCLE INFO E-STOP ABORT CYCLE SPARE INPUT CAR ALIGNED COMMON N.C. N.C. N.C. SEQUENCE OK_NO SEQUENCE OK_C SEQUENCE NOK_NO SEQUENCE NOK_C SYSTEM READY_NO SYSTEM READY_C SPARE OUT_NO SPARE OUT_C PARK_NO PARK_C

0.44 mm² BN
0.44 mm² RD
0.44 mm² OG
0.44 mm² YE
0.44 mm² GN
0.44 mm² BU
0.44 mm² VI
0.44 mm² GY
0.44 mm² WH
0.44 mm² BK
0.44 mm² BN
0.44 mm² RD
0.44 mm² BU
0.44 mm² VI
0.44 mm² GY
0.44 mm² WH
0.44 mm² BK
0.44 mm² BN
0.44 mm² RD
0.44 mm² OG

1.13
+A1-XL1:8PE
0,34 mm² BK
0,34 mm² BU
0,34 mm² GY

-XS103.1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

+12V GND N.C. N.C. SPARE MOVE INHIBIT START CYCLE INFO E-STOP ABORT CYCLE SPARE INPUT CAR ALIGNED COMMON N.C. N.C. N.C. SEQUENCE OK_NO SEQUENCE OK_C SEQUENCE NOK_NO SEQUENCE NOK_C SYSTEM READY_NO SYSTEM READY_C SPARE OUT_NO SPARE OUT_C N.C. N.C.

-XS117.1 1 2 3 4 E

W=A12-XS103/A10-XS103.1
UNITRONIC® FD CP plus
3,4 m
25x0,25 mm²
Cable Parallel I/O interface
optical unit LVC1050 <-> connectorbox
Luminoscope unit
HFKAB 191214_01KOL

BN RD PK YE GN BU VT GY WH BK BNRD BNGN BNBU RDBU PKBN YEBN GYBN GYPK WHRD WHPK WHYE WHGN WHBU WHGY WHBK

+A12-XS103:1 +A12-XS103:2 +A12-XS103:3 +A12-XS103:4 +A12-XS103:5 +A12-XS103:6 +A12-XS103:7 +A12-XS103:8 +A12-XS103:9 +A12-XS103:10 +A12-XS103:11 +A12-XS103:12 +A12-XS103:13 +A12-XS103:14 +A12-XS103:15 +A12-XS103:16 +A12-XS103:17 +A12-XS103:18 +A12-XS103:19 +A12-XS103:20 +A12-XS103:21 +A12-XS103:22 +A12-XS103:23 +A12-XS103:24 +A12-XS103:25

W-A14-2SD17/A10-XS117.1
UNITRONIC® LiYY
0,66 m
4x0,34 mm²
Cable switch 'home-position'->
connectorbox trolley Luminoscope unit
HFKAB 080271_00KOL

+A10-XS117.1:1:3 +A10-XS117.1:1:4

+A12-XS103
+A12/3.9

+A10-XS117.1
+A14/2.18

PARALLEL I/O INTERFACE <-> OPTICAL UNIT +A12

CONNECTION 'PARK SWITCH' TROLLEY

			Date	28/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Connectorbox trolley Luminoscope +A10: parallel I/O interface & connections with switch 'home-position' & optical unit LVC1050
			Ed.	LET			Drawingnumber IDE190007
			Appr				+ A10
Modification	Date	Name	Original				Page 2 Total 145

CONNECTION WITH POWER SUPPLY PANEL +A1

+A1/8.17
+A1-XS104.3

W=A10-XS104.2/A1-XS104.3
UNITRONIC® FD CP plus
25x0,25 mm²
Cable E-stop & start interface
LET electrical panel <-> connectorbox Luminoscope

RCAN
120E

+A10
/1.1
CONNECTORBOX TROLLEY
LUMINOSCOPE

-XS102.2 1 2 3 6
-XS104.2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
-XS102.1 2 3 4 1
-XS104.1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

W=A14-1A2-PL8/A10-XS102.1
KABUT 4P-PLATTEKABEL-RJ10
1,5 m
4x0,14 mm²
Cable canbus output APS board ->
connectorbox trolley Luminoscope unit
HFKAB 191180_01KOL

W=A14-XS104/A10-XS104.1
UNITRONIC® 100
1,5 m
16x0,25 mm²
Cable E-stop & start interface
controlbox APS controller
-> connectorbox Luminoscope
HFKAB 191212_01KOL

+A14-1A2-PL8
+A14/1.17

+A14-XS104
+A14/5.16

CANBUS OUT LUMINOSCOPE

EMERGENCY STOP & START <-> CONTROLBOX LUMINOSCOPE

2

+A11/1

			Date	28/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Connectorbox trolley Luminoscope +A10: wiring canbus interface & emergency stop/start interface with thirth party	Drawingnumber IDE190007	+ A10
			Ed.	LET						
			Appr							Page 3
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+A11
VGA LCD SCREEN 15"
COLUMN LUMINOSCOPE SYSTEM

-XS104.1: 1 +12VDC, 2 0VDC

-XS105.1: 1 RED, 6 RED GND, 2 GREEN, 7 GREEN GND, 3 BLUE, 8 BLUE GND, 4 RESERVED, 5 GND HSYNC, 9 N.C., 10 GND VSYNC, 11 ID0, 12 SDA, 13 H_SYNC, 14 V_SYNC, 15 N.C.

W=A12-XS104/A11-XS104.1
ÖLFLEX® FD CLASSIC 810
2,52 m
2x0,75 mm²
Cable VGA output
optical unit LVC1050 -> LCD ssreen
Luminoscope unit
HFKAB 080252A00KOL

+A12-XS104:1
+A12-XS104:4

+A12-XS104
+A12/2.5

12VDC POWER INPUT FROM OPTICAL UNIT +A12

W=A12-XS105/A11-XS105.1
KABAS VGA-03,0-MM
2,57 m
10x0.25 mm²
Cable VGA output
optical unit LVC1050 -> LCD ssreen
Luminoscope unit
HFKAB 080253_00KOL

+A12-XS105:1
+A12-XS105:2
+A12-XS105:3
+A12-XS105:4
+A12-XS105:5
+A12-XS105:10
+A12-XS105:11
+A12-XS105:12
+A12-XS105:13
+A12-XS105:14

+A12-XS105
+A12/2.11

VGA INPUT FROM OPTICAL UNIT +A12

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	VGA-LCD screen Luminoscope +A11: wiring 12Vdc power input & VGA-graphics input	Drawingnumber IDE190007	+ A11
			Ed.	LET						
			Appr							Page 1
Modification	Date	Name	Original							Total 145

+A12

/2.3
/3.3

OPTICAL UNIT LUMINOSCOPE TYPE LVC1050

POWER INPUT OPTICAL UNIT

-XS100.3: 24V_LVC (A), GND_LVC (B)

W=A14-1A2-PL4/A12-XS100.3
ÖLFLEX® FD CLASSIC 810
2,38 m
2x0,75 mm²
Cable 24Vdc APS controller board -> optical unit LVC1050 Luminoscope unit
HFKAB 080254_00KOL

+A14-1A2-PL4:1
+A14-1A2-PL4:2

+A14-1A2-PL4
+A14/1.9

24Vdc POWER INPUT
FROM APS UNIT +A14

RS232 COMMUNICATION PORT OPTICAL UNIT

-XS101: 1 N.C., 2 TXD, 3 RXD, 4 N.C., 5 GND, 6 N.C., 7 N.C., 8 N.C., 9 N.C.

W=A12-XS101/A10-XS101.1
UNITRONIC® FD CY
3,57 m
4x0,25 mm²
Cable RS232 interface
optical unit LVC1050 -> connectorbox Luminoscope unit
HFKAB 191213_01KOL

BN YE GN

+A12-XS101:2
+A12-XS101:3
+A12-XS101:5

+A12-XS101
+A10/1.17

RS232 INTERFACE <-> CONNECTORBOX +A10

CANBUS OUTPUT OPTICAL UNIT

-XS102: 1 CAN_V+, 2 CAN_H, 3 CAN_L, 4 CAN_GND

W=A12-XS102/A14-1A2-PL7
KABUT 4P-PLATTEKABEL-RJ10
2,41 m
4x0,14 mm²
Cable canbus input APS-board from optical unit LVC1050 Luminoscope unit
HFKAB 080256_00KOL

+A12-XS102:1
+A12-XS102:2
+A12-XS102:3
+A12-XS102:4

+A12-XS102
+A14/1.13

CANBUS OUTPUT ->
APS UNIT +A14

			Date	28/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE
			Ed.	LET			
			Appr				
Modification	Date	Name	Original				

Optical unit/light box Luminoscope +A12:
plugs & wiring 24Vdc power input, RS232 interface + canbus interface

Drawingnumber
IDE190007

+ A12

Page 1
Total 145

+A12
/1.2
OPTICAL UNIT LUMINOSCOPE TYPE LVC1050

12VDC POWER OUTPUT OPTICAL BLOCK

-XS104: 1 +12VDC, 3 N.C., 4 0VDC

VGA OUTPUT OPTICAL BLOCK

-XS105: 1 RED, 6 RED GND, 2 GREEN, 7 GREEN GND, 3 BLUE, 8 BLUE GND, 4 RESERVED, 5 GND HSYNC, 9 N.C., 10 GND VSYNC, 11 ID0, 12 SDA, 13 H_SYNC, 14 V_SYNC, 15 N.C.

W=A12-XS104/A11-XS104.1
ÖLFLEX® FD CLASSIC 810
2,42 m
2x0,75 mm²
Cable VGA output
optical unit LVC1050 -> LCD ssreen
Luminoscope unit
HFKAB 080252_00KOL

1 — 2

+A12-XS104:1 — +A12-XS104:4

W=A12-XS105/A11-XS105.1
KABAS VGA-03,0-MM
2,57 m
10x0.25 mm²
Cable VGA output
optical unit LVC1050 -> LCD ssreen
Luminoscope unit
HFKAB 080253_00KOL

RD 0.25	GN 0.25	BU 0.25	GN 0.14	BU 0.14	WH 0.14	BK 0.14	BN 0.14	RD 0.14	VI 0.14					
+A12-XS105:1	+A12-XS105:2	+A12-XS105:3	+A12-XS105:4	+A12-XS105:5	+A12-XS105:10	+A12-XS105:11	+A12-XS105:12	+A12-XS105:13	+A12-XS105:14					

+A12-XS104
+A11/1.5

+A12-XS105
+A11/1.14

12Vdc OUTPUT -> LCD SCREEN +A11

VGA OUTPUT -> LCD SCREEN +A11

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE
			Ed.	LET			
			Appr				
Modification	Date	Name	Original				

Optical unit/light box Luminoscope +A12:
plugs & wiring spare 12Vdc power output +
VGA graphics output

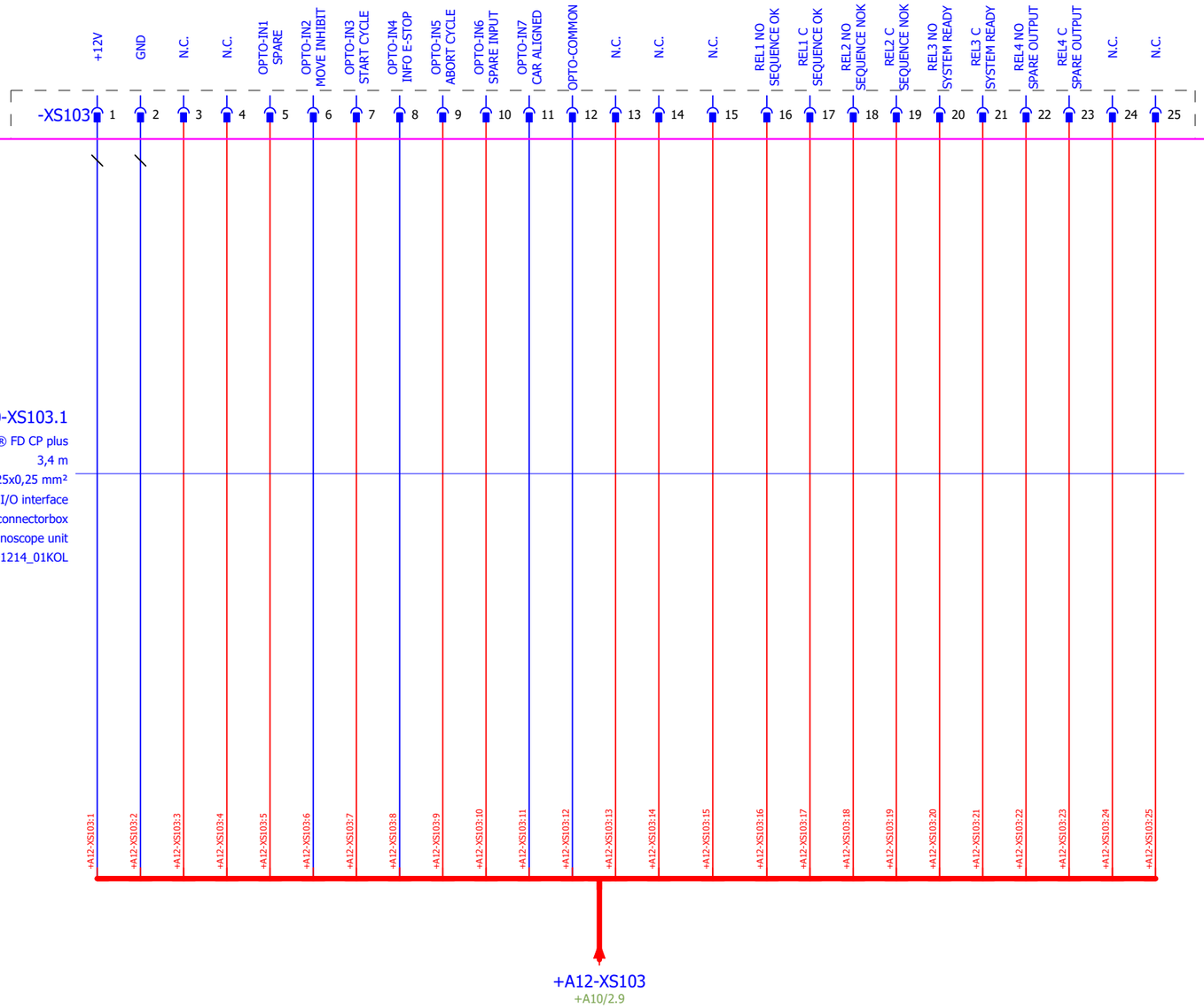
Drawingnumber
IDE190007

+ A12

Page 2
Total 145

+A12
/1.2
OPTICAL UNIT LUMINOSCOPE TYPE LVC1050

PARALLEL I/O INTERFACE OPTICAL BLOCK



PARALLEL I/O INTERFACE <-> CONNECTORBOX +A10

			Date	28/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	Optical unit/light box Luminoscope +A12: plugs & wiring parallel I/O interface	Drawingnumber IDE190007	+ A12
			Ed.	LET						
			Appr							Page 3
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+A14
/2.2 /4.1 /6.1 /8.1
/3.1 /5.1 /7.1
APS XZ-MOVEMENT LUMINOSCOPE

-1A2
/2.2 /4.1 /6.1 /8.1
/3.1 /5.1 /7.1
APS CONTROLLER BOARD
090338C

POWER INPUT
APS CONTROLLER BOARD

-PL5 1 3 2
24V GND PE

POWER OUT
APS CONTROLLER BOARD

-PL4 1 2
24V GND
+ -

CANBUS INPUT
APS CONTROLLER BOARD

-PL7 1 2 3 4
CAN_V+ CAN_H CAN_L CAN_GND

CANBUS OUTPUT
APS CONTROLLER BOARD

-PL8 1 2 3 4
CAN_V+ CAN_H CAN_L CAN_GND

W=A10-XS100.2/A14-1A2-PL5
ÖLFLEX® CLASSIC 100
1,39 m
3x0,75 mm²
Cable 24Vdc connectorbox -> APS controller board
Luminoscope unit
HFKAB 191210_01KOL

+A10-XS100.2:1 +A10-XS100.2:2 +A10-XS100.2:E

+A10-XS100.2
+A10/1.4

W=A14-1A2-PL4/A12-XS100.3
ÖLFLEX® FD CLASSIC 810
2,38 m
2x0,75 mm²
Cable 24Vdc APS controller board ->
optical unit LVC1050 Luminoscope unit
HFKAB 080254_00KOL

1 2
+A14-1A2-PL4:1 +A14-1A2-PL4:2

+A14-1A2-PL4
+A12/1.4

W=A12-XS102/A14-1A2-PL7
KABUT 4P-PLATTEKABEL-RJ10
2,41 m
4x0,14 mm²
Cable canbus input APS-board from
optical unit LVC1050 Luminoscope unit
HFKAB 080256_00KOL

BK RD GN YE
+A12-XS102:1 +A12-XS102:2 +A12-XS102:3 +A12-XS102:4

+A12-XS102
+A12/1.16

W=A14-1A2-PL8/A10-XS102.1
KABUT 4P-PLATTEKABEL-RJ10
1,5 m
4x0.14 mm²
Cable canbus output APS board ->
connectorbox trolley Luminoscope unit
HFKAB 191180_01KOL

BK RD GN YE
+A14-1A2-PL8:1 +A14-1A2-PL8:2 +A14-1A2-PL8:3 +A14-1A2-PL8:4

+A14-1A2-PL8
+A10/3.6

24Vdc POWER INPUT
FROM CONNECTORBOX +A10

24Vdc POWER ->
OPTICAL BLOCK +A12

CANBUS INPUT FROM
OPTICAL BLOCK +A12

CANBUS OUTPUT ->
CONNECTORBOX +A10

+A12/3

			Date	28/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	APS-controller board +A14 Luminoscope: plugs & wiring 24Vdc power in/out + input/output Canbus interface	Drawingnumber IDE190007	+ A14
			Ed.	LET						
			Appr							Page 1
Modification	Date	Name	Original							Total 145

+A14
/1.1
APS XZ-MOVEMENT LUMINOSCOPE

'PARK' SWITCH <->
CONNECTORBOX +A10

-1A2
/1.2
APS CONTROLLER BOARD
090338C

ENCODER L/R-MOVEMENT
ZERO PX L/R MOVEMENT
LIMIT SWITCH L/R MOVEMENT
MOTOR L/R MOVEMENT

-PL9: 1 GND, 2 N.C., 3 CHA, 4 +5V, 5 CHB, 6 N.C., 7 N.C., 8 N.C., 9 N.C., 10 N.C.
-PL10: 1 +24V, 2 ZERO, 3 GND
-PL11: 1 +24V, 2 LIMIT 0, 3 LIMIT 1, 4 +24V
-PL12: 1 MOT2, 2 MOT1

+A10/2.17
+A10-XS117.1
+A10-XS117.1:3
+A10-XS117.1:4

W=A14-1A2-PL9/A14-2B1-PL9.1
LET 0MOT503570100
1,15 m
4x0.14 mm²
Cable encoder L/R movement ->
APS controller board Luminoscope unit
BK WH RD BN

W=A14-1A2-PL10/A14-2SE6-PL10.1
RKT 4-07/2M
1,5 m
4x0,34 mm²
Cable zero proximity switch L/R movement ->
APS controller board Luminoscope unit
HFKAB 191208_01KOL
BN BK BU

W=A14-1A2-PL11/A14-2SD10
UNITRONIC® LiYY
1,4 m
4x0,34 mm²
Cable limit switch L/R movement ->
APS controller board Luminoscope unit
HFKAB 191209_01KOL
BN YE

0.75 mm²
0,87 m
BK

0.75 mm²
0,87 m
RD

W=A14-2SD17/A10-XS117.1
UNITRONIC® LiYY
0,66 m
4x0,34 mm²
Cable switch 'home-position'->
connectorbox trolley Luminoscope unit
HFKAB 080271_00KOL
GN WH

-PL9.1: 1 2 3 4 5
-PL10.1: 1 4 3
-S1: 1 2 3
-S1: C NC
-M1: M
-S1: NO C

-2B1
ENCODER L/R MOVEMENT

-2SE6
ZERO SWITCH L/R MOVEMENT

-2SD10
LIMIT SWITCH L/R MOVEMENT

-2M14
MOTOR L/R MOVEMENT

-2SD17
PARK SWITCH

TROLLEY HEADLIGHT AIMER

1 3

			Date	28/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	APS-controller board +A14 Luminoscope: wiring motor, encoder & switches L/R movement motorized trolley Luminoscope
			Ed.	LET				
			Appr					
Modification	Date	Name	Original					

Drawingnumber
IDE190007

+ A14

Page 2
Total 145

+A14
/1.1
APS XZ-MOVEMENT LUMINOSCOPE

-1A2
/1.2
APS CONTROLLER BOARD
090338C

ENCODER U/D MOVEMENT
-PL13: 1 N.C. | 2 +5V | 3 GND | 4 N.C. | 5 CHA- | 6 CHA+ | 7 CHB- | 8 CHB+ | 9 CH0- | 10 CH0+

ZERO PX U/D MOVEMENT
-PL14: 1 +24V | 2 ZERO | 3 GND

LIMIT 0 U/D MOVEMENT
-PL14: 4 +24V | 5 LIM0 | 6 GND

LIMIT 1 U/D MOVEMENT
-PL14: 7 +24V | 8 LIM1 | 9 GND

SIGNALTOWER LUMINOSCOPE
-PL14: 10 EM_ST LAMP | 11 PARK LAMP | 12 SOUNDER | 13 SPARE LAMP | 14 GND

W=A14-1A2-PL13/A14-3B2-PL13.1
UNITRONIC® FD CP plus
0,56 m
10x0,14 mm²
Cable encoder U/D movement ->
APS controller board Luminoscope unit
HFKAB 080264_00KOL
BN RD PK YE GN BU VT GY WH BK

W=A14-1A2-PL14/A14-3SE8
BI5-Q08-VP6X2
1,16 m
4x0,25 mm²
Cable zero proximity switch
U/D movement ->
APS controller board Luminoscope unit
BN BK BU

W=A14-1A2-PL14/A14-3SD10
UNITRONIC® LiYY
1,16 m
4x0,25 mm²
Cable upper limit switch
U/D movement ->
APS controller board
Luminoscope unit
BN YE

W=A14-1A2-PL14/A14-3SD14
UNITRONIC® LiYY
1,7 m
4x0,25 mm²
Cable lower limit switch
U/D movement ->
APS controller board
Luminoscope unit
BN YE

W=A14-1A2-PL14/A14-3H16
UNITRONIC® FD CP plus
0,7 m
5x0,25 mm²
Cable signaltower ->
APS controller board Luminoscope unit
HFKAB 080267_00KOL
BN YE GN GY WH

-PL13.1: 1 NC1 | 2 +5V | 3 GND | 4 NC2 | 5 CHA- | 6 CHA+ | 7 CHB- | 8 CHB+ | 9 CH0- | 10 CH0+

-3B2
ENCODER U/D MOVEMENT

-S1: 1 (+), 2 (-), 3

-3SE8
ZERO SWITCH
U/D MOVEMENT

-S1: C, NC

-3SD10
LIMIT 0 (UP)
U/D MOVEMENT

-S1: C, NC

-3SD14
LIMIT 1 (DOWN)
U/D MOVEMENT

-X1: 1 | 2 | 3 | 4 | C
-H1 EMERGENCY STOP (X1, X2)
-H2 PARK/SYSTEM READY (X1, X2)
-H3 ADJUSTMENT OK (X1, X2)

-3H16
SIGNALTOWER

COLUMN HEADLIGHT AIMER

2 4

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	APS-controller board +A14 Luminoscope: wiring encoder & switches U/D movement motorized column + signaltower Luminoscope
			Ed.	LET			Drawingnumber IDE190007
			Appr				+ A14
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+A14
/1.1
APS XZ-MOVEMENT LUMINOSCOPE

-1A2
/1.2
APS CONTROLLER BOARD
090338C

MOTORMODULE U/D MOVEMENT

-PL15 1 MOT- 2 MOT+ 3 BRAKE+ 4 BRAKE-

HOLD SIGNAL APS

-PL23 1 +24V 2 HOLD 3 GND

+

0.22 mm²
0,1 m
BK
HFKAB 060026_00KOL

RS232 PROGRAM PLUG
APS BOARD

-PL6 1 TXD 2 RXD 3 GND

W=A14-1A2-PL15/A14-4M2-PL15.1
ÖLFLEX® FD CLASSIC 810
0,46 m
5x0,75 mm²
Cable motor & brake U/D movement ->
APS controller board Luminoscope unit
HFKAB 080265_00KOL

1 2 3 4

-PL15.1 1 4 2 5 3 6

X2 X1 -D1

X2 X1 -D2

0.75 mm² BK
0.75 mm² RD
0.44 mm² GY
0.44 mm² GY

-M1 M

-YB1

-4M2
MOTORMODULE U/D MOVEMENT

COLUMN HEADLIGHT AIMER

3 5

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	APS-controller board +A14 Luminoscope: wiring motor with brake U/D movement motorized column Luminoscope + plug 'Hold APS' & RS232 programmation plug	Drawingnumber IDE190007	+ A14	
			Ed.	LET							
			Appr								
Modification	Date	Name	Original								

+A14
/1.1
APS XZ-MOVEMENT LUMINOSCOPE

-1A2
/1.2
APS CONTROLLER BOARD
090338C

EMERGENCY STOP & START CIRCUIT

EMERG. STOP1 · EMERG. STOP2 · +24V · +24V · START1 · LED START · START2 · GND

-PL1 8 7 6 5 4 3 2 1

W=A14-1A2
UNITRONIC® FD CP plus
25x0,25 mm²
Cable wiring I/O signals
from pushbuttons controlbox
APS-board Luminoscope unit

BN RD PK YE GN BU VT GY

-5SN4 13 14
/5.16 /5.19
/5.17 /5.12
EMERGENCY STOP

-5SL6 E 13 14
/5.8
/5.13
Green
RESET/
START

X1 X2 -5SL6 /5.7 23 24

0.22 mm² GY

-5SL6 /5.7 33 34

0.22 mm² RD

E-STOP & START INTERFACE <-> CONNECTORBOX +A10

+A10/3.13
+A14-XS104

W=A14-XS104/A10-XS104.1
UNITRONIC® 100
1,5 m
16x0,25 mm²
Cable E-stop & start interface
controlbox APS controller
-> connectorbox Luminoscope
HFKAB 191212_01KOL

+A14-XS104:1 … +A14-XS104:12

BN PK OG YE GN BU VT BG BK TR RDWH YEWH

E-STOP CH 1_NC · E-STOP CH 1_C · START_NO · START_C · PILZ INFO_NO · PILZ INFO_C · E-STOP CH 2_NC · E-STOP CH 2_C · E-STOP CH 3_NC · E-STOP CH 3_C · E-STOP CH 4_NC · E-STOP CH 4_C

-XS104 1 2 3 4 5 6 7 8 9 10 11 12

0.22 mm² BN 51 -5SN4 /5.4 EMERGENCY STOP 52 0.22 mm² RD
0.22 mm² BN 21 -5SN4 /5.4 EMERGENCY STOP 22 0.22 mm² BN
0.22 mm² BK 31 -5SN4 /5.4 EMERGENCY STOP 32 0.22 mm² BK
0.22 mm² BN 41 -5SN4 /5.4 EMERGENCY STOP 42 0.22 mm² BN

			Date	28/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	APS-controller board +A14 Luminoscope: wiring emergency stop button & start button controlbox Luminoscope
			Ed.	LET			Drawingnumber IDE190007
			Appr				+ A14
Modification	Date	Name	Original				Page 5 / Total 145

+A14
/1.1
APS XZ-MOVEMENT LUMINOSCOPE

-1A2
/1.2
APS CONTROLLER BOARD
090338C

DIGITAL INPUTS I 1.1-I 1.8

-PL16

	EM.STOP BUTTON	PROCESS STOP	START BUTTON	SPARE INPUT 1	SPARE INPUT 2	SPARE INPUT 3	SPARE INPUT 4	SPARE INPUT 5	GND	+24V
	1	2	3	4	5	6	7	8	9	10

DIGITAL INPUTS I 1.9-I 1.16

-PL17

SPARE INPUT 6	SPARE INPUT 7	SPARE INPUT 8	MOVE BUTTON	REAIM BUTTON	ABORT BUTTON	VALIDATE BUTTON	SPARE INPUT 9	GND	+24V
1	2	3	4	5	6	7	8	9	10

+

W=A14-1A2
UNITRONIC® FD CP plus
25x0,25 mm²
Cable wiring I/O signals
from pushbuttons controlbox
APS-board Luminoscope unit

WH BK BNRD BNGN RDBU

-6S11 Blue NEXT/MOVE — 13 / 14
-6SL13 /7.14 Red REIAM — 13 / 14
-6S14 Red ABORT CYCLE — 13 / 14
-6S15 Black VALIDATE ADJUSTMENT — 13 / 14

0.22 mm² RD
0.22 mm² RD
0.22 mm² RD

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	APS-controller board +A14 Luminoscope: plugs input signals APS-board & connection with pushbuttons controlbox Luminoscope	Drawingnumber IDE190007	+ A14
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+A14
/1.1
APS XZ-MOVEMENT LUMINOSCOPE

-1A2
/1.2
APS CONTROLLER BOARD
090338C

DIGITAL OUTPUTS O 1.1-O 1.8

-PL18
1 EM.STOP LAMP SIGNALTOWER
2 PARK LAMP SIGNALTOWER
3 SOUNDER SIGNALTOWER
4 SPARE LAMP SIGNALTOWER
5 LED START BUTTON
6 SPARE OUTPUT 1
7 SPARE OUTPUT 2
8 SPARE OUTPUT 3
9 GND
10 +24V

DIGITAL OUTPUTS O 1.9-O 1.16

-PL19
1 SPARE OUTPUT 4
2 SPARE OUTPUT 5
3 SPARE OUTPUT 6
4 SPARE OUTPUT 7
5 REAIM LAMP
6 SPARE OUTPUT 8
7 SPARE OUTPUT 9
8 SPARE OUTPUT 10
9 GND
10 +24V

W=A14-1A2
UNITRONIC® FD CP plus
25x0,25 mm²
Cable wiring I/O signals
from pushbuttons controlbox
APS-board Luminoscope unit

YEBN
WHPK

-6SL13
/6.13
REAIM
X1
X2

6 8

			Date	20/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	APS-controller board +A14 Luminoscope: plugs output signals APS-board & connection with leds illuminated pushbuttons controlbox Luminoscope	Drawingnumber IDE190007	+ A14	
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+A14
/1.1
APS XZ-MOVEMENT LUMINOSCOPE

-1A2
/1.2
APS CONTROLLER BOARD
090338C

MANAL UP/DOWN/LEFT/RIGHT MOVEMENT

-PL30: 1 +24V, 2 DIR 0 L/R MOVEMENT, 3 DIR 1 L/R MOVEMENT, 4 DIR 0 U/D MOVEMENT, 5 DIR 1 U/D MOVEMENT, 6 GND

SPARE ANALOG INPUTS HEIGHT DETECTION BAR

-PL22: 1 +5V, 2 GND, 3 +5V, 4 GND, 5 CEL 1, 6 CEL 2, 7 CEL 3, 8 CEL 4, 9 CEL 5, 10 CEL 6, 11 CEL 7, 12 CEL 8, 13 CEL 9, 14 CEL 10, 15 CEL 11, 16 CEL 12, 17 CEL 13, 18 CEL 14, 19 CEL 15, 20 CEL 16

+

W=A14-1A2
UNITRONIC® FD CP plus
25x0,25 mm²
Cable wiring I/O signals
from pushbuttons controlbox
APS-board Luminoscope unit

WHGN WHYE WHBU

-8S5 Black MANUAL UP: 13 / 14
-8S6 Black MANUAL DOWN: 13 / 14

0.22 mm²
RD

			Date	24/06/2019	IDE190007 Luminoscope headlamp aiming system LVC1050-APS-TM (PLM-TM)	L.E.T. AUTOMOTIVE	VAARTLAAN 20 B-9800 DEINZE TEL:+32 (0)9 381 87 87 FAX:+32 (0)9 386 92 00 EMAIL:INFO@LET.BE	APS-controller board +A14 Luminoscope: plug for manual up/down pushbuttons controlbox + spare plug for conection height detection bar	Drawingnumber IDE190007	+ A14	
			Ed.	LET							
			Appr								Page 8
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