



ALCOLOCK™ LR

12/24V

Technical Specification

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ALCOLOCK™ LR

Alcohol Interlock

Technical Specifications

12/24 Volt Model



Overview

The ALCOLOCK series of alcohol interlocks are devices which are intended to prevent in the blocked state the starting of a motor vehicle, and which can be brought into the unblocked state only after presenting and analyzing a breath sample with an alcohol concentration below a set value. It consists of a handset and a control unit electrically connected to the vehicle.

The ALCOLOCK alcohol interlock only prevents the starting of the vehicle; it does not influence a running vehicle motor.

The installation of the ALCOLOCK alcohol interlock requires connection to vehicle +12V or +24V, vehicle ground, monitoring of either the ignition switch or tachometer signal or both, and the interruption of the starter wire.

After presenting a proper breath sample the ALCOLOCK alcohol interlock will close a set of relay contacts that allow the vehicle motor to start. The ALCOLOCK alcohol interlock starter relay shall stay closed until after the vehicle motor and ignition switch has been turned off plus a preprogrammed restart period. The restart period does not require a new breath sample and is typically programmed between 3 and 60 minutes.

ALCOLOCK™ LR 12/24V



12/24 Volt

Handset Specifications

Classification	Designed to meet European Standard pr EN 50436-1, class A
Operating Temperature	-45°C to +85°C
Display Size	OLED 4.3cm x 3.3cm
Display Resolution	106 x 28 Dot Pixel
Temperature	-40°C to +70°C
Alcohol Sensor	ACS Custom Part
Accuracy	±.02 at .20 g/l
Range of Measurement	0.00 to 2.5 g/l
Alcohol Sample Pump	ACS Custom Part
Power Up Time (from Turn on)	15 -180 seconds
Breath Sample Time	5 second moderate and continuous 1.2 litre breath volume

Analysis Time	5 to 25 seconds
Purge Cycle	30 seconds
Recycle Time (Recovery)	10 to 30 seconds
Mouthpieces (Style)	Elliptical
Handset Cable Length	124 cm
Handset Size (length, width, & depth)	14 x 5 x 2.5 cm
Handset Weight	105 g
Handset Audio	Buzzer tone with volume control
Handset Enclosure Material	AB and PC, UL94V0 Lithium Battery Coin-Type Panasonic BR 1225A
Handset Real-Time Clock Battery	3 Volt 48mAh Size: 12.5mm diameter Height: 2.5mm Weight: .08 grams/ Lifetime: 6 years



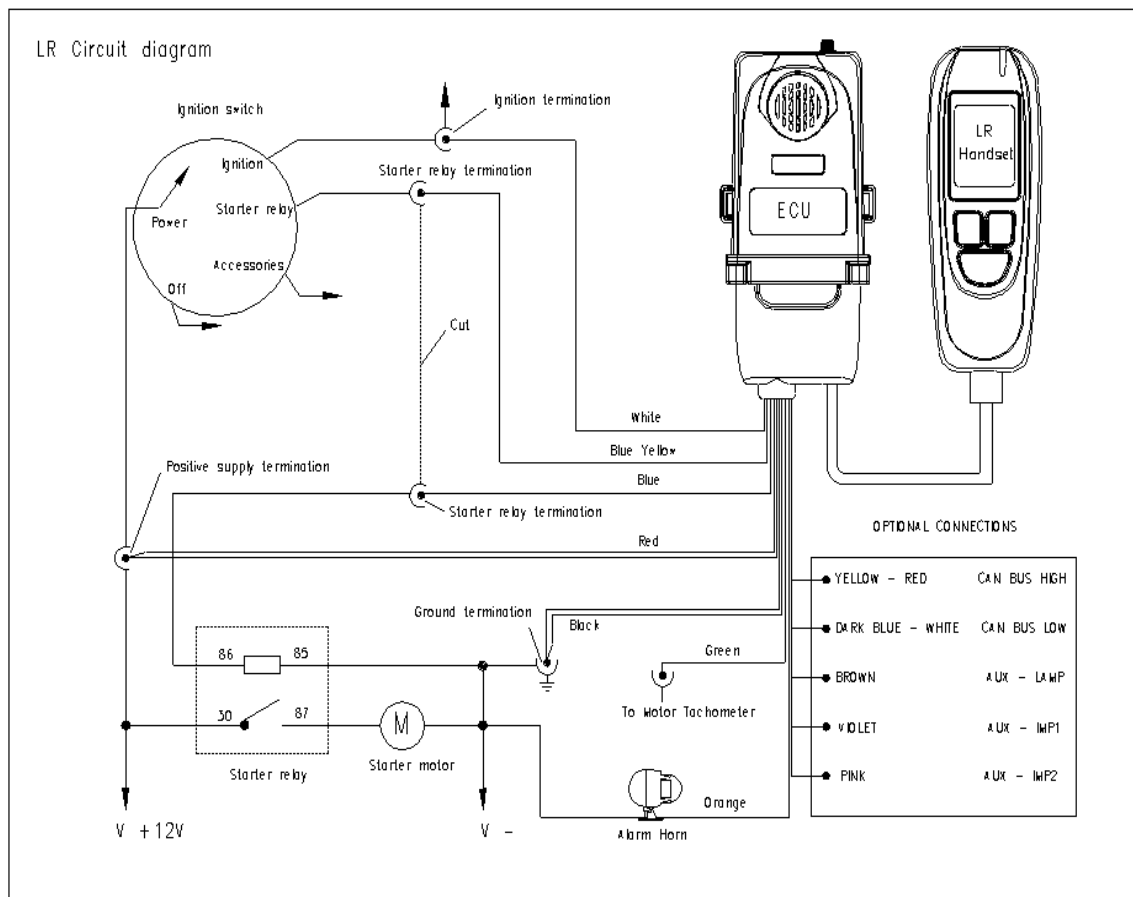
ECU Specifications

LR - 12/24 Volt

ECU Size (length width depth)	10.2cm x 6.3 cm x 2 cm
ECU Weight	92 g

Operating Voltage	9V to 32V/1.2A
ECU Audio	Buzzer Tone
ECU Real-Time Clock Battery	3 Volt 48mAh Size: 12.5mm diameter Height: 2.5mm Weight: .08 grams Lifetime: 6 years
ECU Enclosure	ABS and PC, UL94V0

Circuit Diagram (Overview)



Current Consumption

State @ Room Temperature	Duration	Minimum Current (amps)	Maximum Current (amps)	Average Current (amps)
Warm-up	30 sec – 4, 5 min	0,09	1,3	0,34
Ready	1 min	0,097	0,83	0,14
Sleep Mode	continuous	0,0033	0,0034	0,0034
Test: Blow	5 sec	0,15	1,01	0,28
Test: Solenoid active	1 sec	0,17	0,37	0,23
Test: Analysis	1 sec	0,18	0,23	0,21
Vehicle Running	continuous	0,16	0,84	0,21

Feature	Operation	Comment
Automatic Power Down	Four programmable power down times	Power down time: 5, 30, 60 and 90 minutes
Emergency Override (Optional)	Random code	Single or multiple use
Calibration	Alcohol-Water Simulator Calibration Interval: 6 months	Calibration by ACS auto calibration stations Part number: #79-006103 or #79-007302
TPM Garage Service Mode (Optional)	Random code	Allows starting of motor without a breath test
Wake Up	Up to three programmable wake up times	Predetermined times. Three days of vehicle inactivity disables this function.
Sleep Mode	Four programmable sleep times	Sleep option times: 5, 30, 60 and 90 minutes
Vehicle Run Detection	Ignition and Tach	
Human Breath Detection	Four methods	Humidity, Temperature, Flow and Hum tone detection.

Connector Specifications

The LR ECU consists of two cable assemblies; a handset cable assembly and an auto interface cable assembly. Listed below are connector types, positions available and information regarding conduit materials.

Connector	Part Number	Positions	Part Number for Receptacle Contact	Material
ECU Interface Cable Connector	Molex 39-01-21-45	14	12 contacts Molex 39-00-0513 *See below table	Tinned Copper
ECU Handset Connector	Samtec ASP-156767-03	19	N/A	Gold plated
Handset Cable Connector	Samtec ASP-156767-03	19	N/A	Gold plated

*Receptacle Contact:

Part Number 39-00-0153	18-24 AWG
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The effective operating temperature ranges for Handset Connectors and ECU Connectors is: - **40°C to 105°C.**

19 Pin Connector	19 Pin Connector				
ECU Connector Position	Handset Connector Position	Insulation Colour	Fn.	Gauge	Strands Per Conductor
1	1	Red/Black	+12V/+24V	28	7/32
2, 5, 8, 11	2	Black/Red	+12V/+24V	28	7/32
18	5	Yellow	GND	28	7/32
19	6	White	GND	28	7/32
7	3	Brown	CANH	28	7/32 TP
9	4	Violet	CANL	28	7/32 TP
3, 4, 6, 10, 12, 13, 14, 15, 16, 17		<i>Not Used</i>			

Connector Specifications

Pin	Function	Comment	12/24V
1	Power	Main Power Connection Input from vehicle	Type: Analog input Full Operating Range: 9-32V/1.2A Minimum Input 4.5V (to keep the start relay latched during cranking)
2	Engine Run	Signal Input	Type: digital input “Guaranteed on”: 4.5V~32V “Guaranteed off”: 0V~0.7V Freq=40HZ~1.5KHZ %Duty=25~75
3	Ignition		Type: digital input “Guaranteed on”: 4.5V~16V “Guaranteed off”: 0V~0.7V
4	Relay Output 1	Optional AUX Lamp (positive output)	+12 DC 0.1 amp Normally open
12	Relay Output 2	Optional AUX Horn (positive output)	+12 DC 3 amp Normally open
9, 10	Starter Relay	To Starter Relay	Type: dry contact 3 amp Normally open
5	CanH-2	CAN Communications to Vehicle	Type: bidirectional digital Vin=36V max Vin=36V Max to grd. Vdiff=12V Max
4	CanL-2	CAN Communications to Vehicle	Type: bidirectional digital Vin=40V max Vin=40V Max to grd. Vdiff=12V Max.
8	Ground		

ECU Interface Cable Specifications 14 Pin Cable Connector

Pin Assignment				
Pin	Function	Insulation Colour	Gauge	Strands per Conductor
2	Power	Red	18	34 x 32
3	Engine Run	Green	24	7 x 32
4	Ignition	White	24	7 x 32
6	Auxiliary	Pink	24	7 x 32
12	Horn 1 (Aux)	Orange	18	34 x 32
13	Horn 2 (Aux)	Brown	18	34 x 32
9	Starter Relay 1	Blue	18	34 x 32
10	Starter Relay 2	Blue/White	18	34 x 32
4	CanL	Blue/White	24	7 x 32
5	CanH	Yellow/Red	24	7 x 32
8	Ground	Black	18	34 x 32
11	Auxiliary	Violet	24	7 x 32

Handset: Warm-Up Times

The table below indicates the normal time period to achieve full ready state for operation throughout a temperature range of +85⁰C at the high extreme and -40⁰C at the low extreme.

Temperature	Time (sec)
+85 ⁰ C	31
+45 ⁰ C	31
+25 ⁰ C	33
+10 ⁰ C	47
0 ⁰ C	84
-10 ⁰ C	95
-20 ⁰ C	129
-45 ⁰ C	292

Description of Components

Handset	#79-007308	1
ECU Module Interface Cable	#13-001102	1
ALCOLOCK™ LR ECU 12/24V	#79-007307	1
Elliptical Plastic Mouthpieces (Package of 25)	#95-000145	25 per bag
Handset Cable	#13-001100	1

